

**United States Department of the Interior  
Bureau of Land Management**

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**Environmental Assessment**  
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**September 2018 Oil and Gas Lease Sale**

***Location:*** West Desert District, Fillmore Field Office  
Juab County, Utah

***Applicant/Address:*** U.S. Department of the Interior  
Bureau of Land Management  
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# **CHAPTER 1 INTRODUCTION**

## **1.1 PROJECT LOCATION AND LEGAL DESCRIPTION**

### LEGAL DESCRIPTION:

All seven parcels are located in Juab County, Utah, south of Nephi near Sevier Bridge Reservoir and are on both sides of Interstate 15 (Appendix D).

## **1.2 BACKGROUND**

It is the policy of the Bureau of Land Management (BLM) as derived from various laws, including the Mineral Leasing Act of 1920 (MLA) and the Federal Land Policy and Management Act of 1976 (FLPMA), to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs.

Utah is a major source of natural gas for heating and electrical energy production in the lower 48 states. The continued sale and issuance of lease parcels facilitates exploration and production as oil and gas companies seek new areas for production or attempt to develop previously inaccessible or uneconomical reserves

The BLM's Utah State Office conducts quarterly competitive lease sales to sell available oil and gas lease parcels. A Notice of Competitive Lease Sale, which lists lease parcels to be offered at the auction, is published by the Utah State Office at least 45 days before the auction is held. Lease stipulations applicable to each parcel are specified in the Sale Notice. The decision as to which public lands and minerals are open for leasing and what leasing stipulations may be necessary, based on information available at the time, is made during the land use planning process. Constraints on leasing and any future development of split estate parcels are determined by the BLM in consultation with the appropriate surface management agency or the private surface owner.

In the process of preparing a lease sale, the Utah State Office compiles a list of lands nominated and legally available for leasing, and sends a preliminary parcel list to the appropriate District Office where the parcels are located. Field Office staff then review the legal descriptions of the parcels to determine if they are in areas open to leasing under the relevant Resource Management Plan (RMP). The Field Office also ensures that appropriate stipulations have been included; verify whether any new information has become available that might change any analysis conducted during the planning process; confirm that appropriate consultations have been conducted; and identify any special resource conditions of which potential bidders should be made aware. The BLM then prepares an analysis in compliance with the National Environmental Policy Act (NEPA), usually in the form of an Environmental Assessment (EA).

After the Field Office completes the draft parcel review and NEPA analysis and returns them to the State Office, a list of available lease parcels and associated stipulations and notices is made available to the public through a Notice of Competitive Lease Sale (NCLS). Lease sale notices are posted on the Utah BLM website at: <http://go.usa.gov/xXk8ch>. On rare occasions, the BLM

may defer or withhold additional parcels prior to the day of the lease sale. In such cases, the BLM prepares an errata to the sale notice.

A draft of the EA and an unsigned Finding of No Significant Impacts (FONSI) was made available to the public for a 15 day public comment period by posting the documents on the project's BLM ePlanning NEPA Register Page: <http://go.usa.gov/xQrVx>. The BLM is also issuing a press releases to publicly announce the public comment period for the draft EA and unsigned FONSI. Comments received from the public are reviewed and incorporated into the NEPA document, as applicable.

The EA, with any revisions determined appropriate following the public comment period, and, if still considered appropriate, an unsigned FONSI are again made available to the public through the concurrent posting of those documents and a NCLS at least 45 days in advance of the scheduled lease sale. The posting of the NCLS, EA and FONSI initiates a 10 day public protest period for the proposed lease sale offering that will end 35 days before the scheduled lease sale. The stipulations and notices applicable to each parcel proposed for lease will be specified in attachments to the NCLS. If any changes are needed to the parcels or stipulations and notices identified through the NCLS, an erratum is posted to the BLM Utah's Oil and Gas Leasing website, and in the public room for the BLM Utah State Office, in order to notify the public of any such changes. The lease parcels, as identified by the NCLS and any errata, would be offered for sale at a competitive lease sale tentatively scheduled to be held in September 2018.

If the parcels are not leased at the September 2018 lease sale, then they will remain available to be leased noncompetitively for a period of up to two years to any qualified lessee at the minimum bid cost. Parcels obtained in this way may be re-parceled by combining or deleting other previously offered lands. Mineral estate that is not leased within a two-year period after an initial offering will no longer be available and must go through a competitive lease sale process again prior to being leased.

The act of leasing does not authorize any development or use of the surface of lease lands without further application by the operator and approval by the BLM. In the future, the BLM may receive Applications for Permit to Drill (APDs) for those parcels that are leased. If APDs are received, the BLM conducts additional site-specific NEPA analysis before deciding whether to approve the APD, and what conditions of approval (COA) should apply.

The BLM has prepared this EA to disclose and analyze the environmental consequences of the leasing of seven parcels during the September 2018 oil and gas lease sale. The EA is an analysis of potential impacts that could result from the implementation of a proposed action or alternatives to the proposed action. The EA ensures compliance with NEPA in making a determination as to whether any significant impacts could result from the analyzed actions. Significance is defined by NEPA and is found in 40 Code of Federal Regulations (CFR) § 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a FONSI statement. A FONSI statement, if applicable for this EA, would document the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in the EISs prepared for the current land use plan: Fillmore Field Office RMP 1987 House Range Resource Area

Resource Management Plan and Record of Decision (BLM 1987) (“HRRRA RMP/ROD”). If the decision maker determines that this project has significant impacts exceeding those disclosed in the Proposed House Range Resource Area RMP and Final EIS (BLM 1986)(“RMP/EIS”) following the analysis in the EA, then parcels or portions of parcels with significant conflicts will be deferred until the RMP can/be amended/revised and additional lease stipulations added. Upon making a Finding of No Significant Impact (FONSI) a Decision Record (DR) will be signed for the EA approving the selected alternative, whether the Proposed Action or another alternative. This EA is tiered to and incorporates by reference the environmental impact analyses listed in Section 1.7.1.

Seven parcels comprising 8,832.13 acres within the Fillmore Field Office were nominated for the September 2018 Competitive Oil and Gas Lease Sale. Seven parcels were determined to be open to be leased for oil and gas development under the Fillmore Field Office RMP. This figure is comprised of 8,832.13 acres of federal land and 4,281.89 acres of split-estate land. The mineral rights for these parcels are owned by the federal government and administered by the Fillmore Field Office (see Appendix B). The legal descriptions of the nominated parcels are in Appendix A.

This EA documents the review of the nominated parcels under the administration of the Fillmore Field Office. It serves to verify conformance with the approved land use plan and provides the rationale for the Field Office’s recommendation to offer or to defer particular parcels from a lease sale. This EA is also being used to determine if the stipulations and lease notices attached to the parcels as part of the Proposed Action would be sufficient to protect resources and inform potential lessees of special conditions and restrictions that may constrain development. Additional lease notices may be developed during analysis, if warranted.

### **1.3 PURPOSE AND NEED**

The purpose of the Proposed Action is to respond to the nominations or expressions of interest for oil and gas leasing on specific federal mineral estate through a competitive leasing process.

The need for the Proposed Action is established by the BLM’s responsibility under the Mineral Leasing Act (MLA) of 1920, as amended, the Mining and Minerals Policy Act of 1970, the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act), and the Federal Land Policy and Management Act (FLPMA) and to promote the orderly development of oil and gas on the public domain. Parcels may be nominated by the public, the BLM or other agencies. The MLA establishes that deposits of oil and gas owned by the United States are subject to disposition in the form and manner provided by the MLA under the rules and regulations prescribed by the Secretary of the Interior, where consistent with FLPMA and other applicable laws, regulations, and policies.

#### **1.3.1 Decision to be Made**

The BLM will decide whether to offer and issue for lease the nominated parcels and, if so, under what terms.

## 1.4 **PLAN CONFORMANCE REVIEW**

The Proposed Action was reviewed for conformance (43 CFR 1610.5, BLM 1617.3) with the following plan (s):

The HRRRA RMP/ROD decisions for Mineral Resources - Oil and Gas (at page 76, Table 2-6, and Map 9), which identify the leasing categories for Juab County, as augmented by the DR prepared for the HRRRA RMP Oil and Gas Leasing Implementation EA (EA UT-050-89-025, BLM, 1988 (“HRRRA Oil and Gas Leasing Implementation EA”) and the DR prepared for the Oil and Gas Leasing in the Fillmore Field Office EA (EA UT-010-2008-050, BLM, 2009). The alternatives are also consistent with the RMP decisions related to the management of the following resources, including but not limited to: soil, water, visual resources, cultural resource and range management.

The RMP designated approximately 73,685 (Category 2) acres of federal mineral estate open for continued oil and gas development and leasing. The RMP (with associated amendments) also describes specific stipulations that would be attached to new leases offered in certain areas. Under the Proposed Action, parcels to be offered would be leased subject to stipulations prescribed by the RMP. Therefore, the Proposed Action conforms to the fluid mineral leasing decisions in the RMP and subsequent amendments, and are consistent with the RMP’s goals and objectives for natural and cultural resources.

*The Proposed Action specifically conform to the following Land Use Plan decisions (RMP Figure 2.21, pp. 121):*

*Oil and gas leases which are cancelled, expired, or are otherwise terminated will be re-offered for lease if the area’s status does not prevent it. Appropriate environmental stipulations will be attached. Notices of Intent to Conduct Geophysical Exploration Operations will be processed within the required time frame.*

*Proposed oil and gas categories are: Category 1, 2,049,611 acres; Category 2, 73,685 acres; Category 3, 61,410 acres, and Category 4, 59,190 acres (Figure 2.21).*

It is also consistent with the RMP decisions and their corresponding goals and objectives related to the management of (including but not limited to) air quality, cultural resources, recreation, riparian, soils, water, vegetation, fish & wildlife and Areas of Critical Environmental Concern (ACEC).

Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, October 2008 or later edition). Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms. Nondiscretionary actions include the BLM’s requirements under federal environmental protection laws, such as the Clean Water Act, Clean Air Act, Endangered Species Act, National Historic Preservation Act, and Federal Land Policy Management Act, which are applicable to all actions on federal lands.

Once the lease has been issued, the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands, subject to the standard lease terms and additional restrictions attached

to the lease in the form of lease stipulations (43 CFR 3101.1-2). Even if no restrictions are attached to the lease, the operations must be conducted in a manner that avoids unnecessary or undue degradation of the environment and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Also included in all leases are the two standard stipulations for the statutory protection of cultural resources and threatened or endangered species (BLM 2013), which are described in Sections 2. BLM would also encourage industry to consider participating in EPA's Natural Gas STAR program. The program is a flexible, voluntary partnership wherein EPA works with companies that produce, process, transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a greenhouse gas.

## **1.5 PUBLIC PARTICIPATION**

### **1.5.1 Scoping**

Internal scoping was conducted through meetings of an interdisciplinary (ID) team of resource specialists and discussion of the nominated parcels. The following issues were identified:

Parcel 19: Nephi City Landfill. See Appendix B Deferral Letter.

Parcel 24: Yuba Lake State Park. Proximity to Blue Springs which provides culinary water to Yuba Lake State Park.

Air Quality, Green House gas, kit fox and migratory birds are issues common to all parcels.

After review of available information, the ID Team determined that the following resources/issues did not have the potential to be significantly impacted by any of the alternatives and, therefore, are dismissed from detailed analysis (See Appendix F – ID Team Checklist): areas of critical environmental concern, cultural resources, environmental justice, farmlands, fire/fuels management, geology/mineral resources, invasive species/noxious weeds, lands/access, livestock grazing, Native American religious concerns, paleontology, rangeland health standards, recreation, socioeconomics, soils, threatened, endangered, or candidate plant species, threatened, endangered or candidate animal species, wastes, water resources/quality, water rights, wetlands/riparian zones, wilderness/WSA, wildlife and fish excluding designated/special status species, visual resources, wild horses and burros, and lands with wilderness characteristics.

### **1.5.2 Public Comment Period**

The preliminary EA and the unsigned Finding of No Significant Impact (FONSI) are available for a 15-day public review and comment period beginning March 29, 2018 and ending April 13, 2018. The document is available online at [https://eplanning.blm.gov/epl-front-office/eplanning/nepa/nepa\\_registerhttp://www.blm.gov/co/st/en/BLM\\_Information/nepa/xxfo.html](https://eplanning.blm.gov/epl-front-office/eplanning/nepa/nepa_registerhttp://www.blm.gov/co/st/en/BLM_Information/nepa/xxfo.html) and in the public room at the Fillmore Field Office. The document may be viewed at the field office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays. Comments should be sent to [blm ut fm ffo o and g comment@blm.gov](mailto:blm_ut_fm_ffo_o_and_g_comment@blm.gov) or by mail

at 95 East 500 North, Fillmore, UT 84631 by close of business on April 29, 2018. Comments received from the public will be reviewed and incorporated into the EA as appropriate.

## **1.6 *RELATIONSHIP TO STATUTES, REGULATIONS, POLICIES OR OTHER PLANS***

The Proposed Action complies with federal environmental laws and regulations, Executive Orders, and Department of Interior and BLM policies and is consistent, to the maximum extent possible, with state laws and local and county ordinances and plans, including the following:

- Federal Land Policy and Management Act (1976) as amended and the associated regulations at 43 CFR Part 1600
- Mineral Leasing Act (1920) as amended and the associated regulations at 43 CFR Part 3100
- BLM Utah Riparian Management Policy (2005)
- National Historic Preservation Act (1966) as amended and the associated regulations at 36 CFR Part 800
- Endangered Species Act (1973) as amended
- BLM Manual 6840- Special Status Species Management
- Bald and Golden Eagle Protection Act (1962)
- Migratory Bird Treaty Act (1918)
- Utah Partners in Flight Avian Conservation Strategy Version 2.0 (Parrish et al., 2002)
- Birds of Conservation Concern 2002 (USFWS 2008)
- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- MOU between the USDI BLM and USFWS to Promote the Conservation and Management of Migratory Birds (April 2010)
- BLM Handbook 3120-1 Competitive Leases (P) (BLM 2013)
- MOU Among the USDA, USDI and EPA Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process (2011)
- Protection of Ground Water Associated with Oil and Gas Leasing, Exploration and Development (BLM UT IM 2010–055)
- BLM WO IM 2018-034 *Updating Oil and Gas Leasing Reform —Land Use Planning and Lease Parcel Reviews* (BLM, Updating Oil and Gas Leasing Reform - Land Use Planning and Lease Parcel Reviews 2018)
- Inventory of Onshore Federal Oil and Natural Gas Resources and Restrictions to Their Development 2008 Phase III Inventory – Onshore United States. (U.S. Departments of the Interior, Agriculture and Energy 2008)

These documents, and their associated analysis or information, are hereby incorporated by reference, based on their use and consideration by various authors of this document. The attached Interdisciplinary Team Checklist, Appendix F, was also developed after consideration of these documents and their contents. Each of these documents is available for review upon request to the FFO.

## **1.7 DOCUMENTS INCORPORATED BY REFERENCE**

In order to reduce redundant paperwork and analysis in the NEPA process (*See* 40 CFR §§ 1502.20 and 1502.21) the following documents and their associated information or analysis are hereby incorporated by reference.

### **1.7.1 EISs, EAs and Decision Documents**

- Proposed House Range Resource Area RMP and Final EIS (BLM 1986)
- HRRA Oil and Gas Leasing Implementation EA (BLM 1988)
- Oil and Gas Leasing in the Fillmore Field Office EA and DR (BLM 2009)
- Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement [BLM 2007] and Record of decision.

## CHAPTER 2 ALTERNATIVES

### 2.1 INTRODUCTION

This chapter describes the alternatives analyzed in detail. Alternatives considered but not analyzed in detail are also discussed.

### 2.2 REASONABLY FORESEEABLE DEVELOPMENT SCENARIO

Although at this time it is unknown when, where, or if future well sites or roads might be proposed on any leased parcel, should a lease be issued site specific analysis of individual wells or roads would occur when a lease holder submits an APD (Application for Permit to Drill).

Since completion of the HRRA RMP/ROD, the House Range Resource Area was combined with the Warm Springs Resource Area to form the Fillmore Field Office. In 2009, a DR was signed for the *Oil and Gas Leasing in the Fillmore Field Office EA* (“2009 Leasing EA”), which provided updated analysis of the impacts of leasing within the Field Office. The reasonably foreseeable development, (RFD), scenario in the 2009 Leasing EA, (BLM 2009, 52) anticipated one well per year would be drilled within the Field Office. The RFD in 2009 Leasing is still valid. Since it was prepared, only one well has been drilled within the FFO.

There are currently 21 active leases in the FFO, with 138 cumulative “lease years.”<sup>1</sup> A lease is issued for 10 years, so if all the September 2018 parcels are leased, they would add 70 lease years to the cumulative, or 208 total. Thus, the September 2018 parcels would account for 34% of the leases drilled over the next 10 years. Rounding up, it is reasonable to base the impact analysis of the September 2018 lease sale on the typical impacts of drilling four wells estimated to disturb six acres per well. With seven proposed leases the estimated surface disturbance would be 24 acres. However, given the low projected oil and gas densities projected by the 2008 *Inventory of Onshore Federal Oil and Natural Gas Resources and Restrictions to Their Development – Phase III Inventory – Onshore United States* for the area within the parcels (U.S. Departments of the Interior, Agriculture and Energy 2008, 153-54), it is unlikely any of the wells would produce, so impacts from production will be limited to one well in this EA.

The following sections provide a general discussion of possible post-leasing RFD activities. All of these activities would require additional NEPA review.

#### 2.2.1 Well Pad and Road Construction

Equipment for road and well pad construction would include dozers, scrapers, and graders. Topsoil would be salvaged from all disturbed areas and reserved for interim and final reclamation purposes. The size of a well pad would vary but would average approximately 350 feet by 350 plus additional area required for cut and fill slopes, stockpiles of topsoil and spoil, and equipment operation.

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<sup>1</sup> Lease year = number of years remaining on the 10 year lease

Depending on the locations of the proposed wells, it is anticipated that some new or upgraded access roads would be required to access well pads and maintain production facilities. Any new roads constructed for the purposes of oil and gas development would be utilized year-round for maintenance of the proposed wells and other facilities, for the transportation of produced fluids and/or equipment, and would remain open to other land users. New roads or upgrades to existing roads would be constructed to the appropriate standard as required by BLM Manual 9113. Roads accessing oil and gas well locations generally are constructed to the “resource” road standard requiring a 14-foot driving width, a 25-foot to 35-foot construction disturbance width, properly drained and appropriately surfaced. After completion of road construction activities, the width would be reclaimed to an 18-foot wide crowned running surface as well as drainage ditches. It is not possible to determine the distance of any road that would be required because the location of the wells would not be known until the APD state.

### **2.2.2 Well Drilling and Completion Operations**

#### **Hydraulic Fracturing**

Hydraulic fracturing (HF) is a well stimulation technique used to increase oil and gas production from underground rock formations. As summarized below, HF technology is not used on all wells drilled in the Fillmore FO. As a result, HF will be evaluated at the APD stage should the lease parcel be sold/issued, and a development proposal submitted. The following paragraphs provide a general discussion of the HF process that could potentially be implemented if development were to occur, including well construction information and general conditions encountered within the Fillmore FO

HF involves the injection of fluids through a wellbore under pressures great enough to fracture the oil and gas producing formations. The fluid is generally comprised of a liquid such as oil, carbon-dioxide or nitrogen, and proppant (commonly sand or ceramic beads), and a minor percentage of chemicals to give the fluid desirable flow characteristics, corrosion inhibition, etc. The proppant holds open the newly created fractures after the injection pressure is released. Oil and gas flow through the fractures and up the production well to the surface.

HF has been used by oil and natural gas producers since the late 1940s and, for the first 50 years, was mostly used in vertical wells in conventional formations. HF is still used in these settings, but the process has evolved. Technological developments (including horizontal drilling) have led to the use of HF in “unconventional” hydrocarbon formations that could not otherwise be profitably produced.

The use of horizontal drilling through unconventional reservoirs combined with high-volume water based multi-stage HF activities has led to an increase in oil and gas activity in several areas of the country which has, in turn, resulted in a dramatic increase in domestic oil and gas production nationally. However, along with the production increase, HF activities are suspected of causing contamination of fresh water by creating fluid communication between oil and gas reservoirs and aquifers. The EPA recently conducted an assessment of HF on drinking water resources (<https://www.epa.gov/hfstudy>).

Presently no unconventional reservoirs in the Fillmore Field Office are being exploited using high-volume water based HF techniques.

### **Oil and Gas Fields**

Oil and gas fields within the Fillmore Field Office represent a variety of different geologic and production characteristics. These characteristics, specific to a given oil or gas field, influence how operators drill, complete, and produce wells in that field. Historically, most wells in the area have been vertically drilled, targeting “conventional” sandstone and carbonate (limestone or dolomite) formations. “Conventional” in this usage means geologic formations that possess porosity (i.e. space that oil and gas can occupy) and permeability (connected passages through which oil and gas can move). These characteristics are necessary for oil and gas to flow from the formation into a well bore in sufficient volume to be economically produced. HF has long been used to enhance porosity and permeability in conventional reservoirs, and its use is expected to continue with little change.

Because of the reliance on natural fractures to convey oil and gas, and due to other geologic considerations, wells completed in the leased area are rarely stimulated using HF. HF poses a risk of damaging the wells productivity by fracturing into the salts that bound the thin shale reservoir, and allowing salt to invade and seal natural fractures and the well. Consequently, HF activities would be limited in size and would be performed only on wells with little production potential. Because HF has only recently been used in this type of reservoir, its effectiveness is not yet known.

### **Well Construction**

Compliance with Onshore Order No. 2 assures wells are appropriately designed and drilled. In addition, the State of Utah regulates drilling and operating practices under Utah Administrative Code R649-3 and HF activities are specifically addressed in R649-3-39. Well construction—casing and cement design—are tailored to the geologic characteristics of the area, and are designed to provide effective isolation of groundwater and mineral deposits, to control formation pressures that may be encountered, and to provide a single pathway for oil and gas to be produced to the surface.

To ensure the effective isolation of any potentially usable groundwater aquifer, a continuous string of steel pipe (or “casing”) known as the “surface” casing is placed in the well, extending from the surface to at least 50 feet below the bottom of the aquifer. The entire length of that casing string is then cemented into place. The casing is then pressure tested to ensure there are no leaks before deeper drilling resumes.

After drilling deeper, a second string of casing known as “intermediate” casing could be run, if needed, to isolate water flows, high-pressure zones or lost circulation zones. Intermediate casing is typically cemented along its entire length, back to surface. Whether an intermediate casing string will be run is typically known and planned for prior to drilling.

Drilling then continues to the wells planned total depth. If indications of the wells productivity were positive, another string of steel “production” casing would be run and cemented into place.

A sufficient volume of cement would be used to extend above any potentially productive zone to ensure that, following completion of the well, produced fluids can only flow into the cased well.

### **2.2.3 Production Operations**

If wells were to go into production, facilities would be located at the well pad and typically include a well head, a dehydrator/separator unit, and storage tanks for produced fluids. The production facility would typically consist of two storage tanks, a truck load-out, separator, and dehydrator facilities. Construction of the production facility would be located on the well pad and not result in any additional surface disturbance.

All permanent surface structures would be painted a flat, non-reflective color specified by the BLM in order to blend with the colors of the surrounding natural environment. Facilities that are required to comply with the Occupational Safety and Health Act (OSHA) would be excluded from painting color requirements. All surface facilities would be painted immediately after installation and under the direction and approval of the BLM.

All operations would be conducted following the “Gold Book”, *Surface Operating Standards for Oil and Gas Exploration and Development*. The Gold Book was developed to assist operators by providing information on the requirements for conducting environmentally responsible oil and gas operations on federal lands. The Gold Book provides operators with a combination of guidance and standards for ensuring compliance with agency policies and operating requirements, such as those found at 43 CFR 3000 and 36 CFR 228 Subpart E; Onshore Oil and Gas Orders (Onshore Orders); and Notices to Lessees. Included in the Gold Book are environmental BMPs; these measures are designed to provide for safe and efficient operations while minimizing undesirable impacts to the environment.

If oil is produced, the oil would be stored on location in tanks and transported by truck to a refinery. The volume of tanker truck traffic for oil production would be dependent upon production of the wells.

### **2.2.4 Produced Water Handling**

Water is often associated with either produced oil or natural gas. Water is separated out of the production stream and, for a newly completed well, can be temporarily disposed of in the reserve pit for 90 days. Permanent disposal options include discharge to evaporation pits or underground injection. Disposal of produced water is regulated by Onshore Order No. 7.

### **2.2.5 Maintenance Operations**

Traffic volumes during production would be dependent upon whether the wells produced natural gas and/or oil, and for the latter, the volume of oil produced. Well maintenance operations may include periodic use of work-over rigs and heavy trucks for hauling equipment to the producing well, and would include inspections of the well by a pumper on a regular basis or by remote sensing. The road and the well pad would be maintained for reasonable access and working conditions.

### **2.2.6 Plugging and Abandonment**

If the wells do not produce economic quantities of oil or gas, or when it is no longer commercially productive, the well would be plugged and abandoned. The wells would be plugged and abandoned following procedures approved by a BLM Petroleum Engineer, which would include requiring cement plugs at strategic positions in the well bore. All fluids in the reserve pit would be allowed to dry prior to reclamation work. After fluids have evaporated from the reserve pit, sub-soil would be backfilled and compacted within 90 days. If the fluids within the reserve pit have not evaporated within 90 days (weather permitting or within one evaporation cycle, i.e. one summer), the fluid would be pumped from the pit and disposed of in accordance with applicable regulations. The well pad would be re-contoured, and topsoil would be replaced, scarified, and seeded within 180 days of the plugging the well.

## **2.3 ALTERNATIVES ANALYZED IN DETAIL**

### **2.3.1 No Action Alternative**

The BLM NEPA Handbook (h-1790-1) states that for EAs the No Action Alternative generally means that the Proposed Action would not take place. In the case of a lease sale, the leasing of particular parcels would not take place.

Under the No Action Alternative, the BLM would defer all nominated lease parcels from the September 2018 lease sale. The parcels could be considered for inclusion in future lease sales. Surface management would remain the same and ongoing oil and gas development would continue on surrounding private, state, and federal leases.

### **2.3.2 Proposed Action - Lease All Nominated Parcels in Conformance with the RMP**

Under this alternative, the BLM would lease Federal mineral estate in nominated parcels available for leasing in the resource area in accordance with the FFO RMP (September 1986). The current lease sale includes parcels in Juab County. Those lands proposed for lease under this alternative total 8,832.132 acres of federal mineral estate and include a combination of federal and private surface (see Appendix A). The lands have been grouped into appropriate lease parcels for competitive sale as oil and gas leases in accordance with the 43 CFR 3100 regulations. The leases would include the standard lease terms and conditions for development of the surface of oil and gas leases provided in 43 CFR 3100. Stipulations to protect other surface and subsurface resources would also apply, as prescribed by the FFO RMP. These stipulations are described in Appendix A.

H-3120-1, the Competitive Leasing Handbook (BLM 2013) also requires the following two standard stipulations be added to every lease:

#### **Cultural Resource Protection Stipulation**

This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other

authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

#### **Threatened and Endangered Species Act Stipulation**

The lease may now and hereafter contain plants, animals, and their habitats determined to be special status species. The BLM may recommend modifications to exploration and development proposals to further its conservation and management objectives to avoid BLM approved activity that will contribute to a need to list such a species or their habitat. The BLM may require modification to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. The BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligation under requirements of the Endangered Species Act as amended, 16 U. S. C. § 1531 *et seq.* including completion of any required procedure for conference.

## **2.4 Alternatives Considered but not Analyzed in Detail**

No other alternatives to the Proposed Action were identified that would meet the purpose and need of the Proposed Action. The Interior Board of Land Appeals has held that subsumed in a no action alternative is consideration of not leasing any or all parcels. *See Biodiversity Conservation Alliance et al.*, 183 IBLA 97, 124 (IBLA 2013). The No Action alternative eliminates any unresolved resource conflicts by allowing the authorized officer to defer or remove parcels as deemed appropriate.

## **CHAPTER 3    AFFECTED ENVIRONMENT**

### **3.1    *INTRODUCTION***

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix F. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

The CEQ Regulations state that NEPA documents “must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an EA. Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts.

### **3.2    *GENERAL SETTING***

Refer to Appendix D for maps showing the location of the parcels.

These parcels range in size from 300 to 1,709.41 acres for a total of 9,132.132 acres. The parcels are located in Juab County, Utah (Appendix B). The landscape, topography, plant and animal species throughout the proposed parcels to be leased is varied. The area is covered in a mixture of grass and shrubs. Some of the dominant vegetation species are: Wyoming sagebrush, black sagebrush, pinyon pine, juniper, Gambel’s oak, shadscale, needle and thread grass, Indian ricegrass and greasewood. Areas that have been disturbed or burned from a wildfire are predominantly cheatgrass or seeded desirable plant species. The BLM administered areas are utilized by grazing cattle for a portion of the year.

The proposed action would result in the leasing for oil and gas development of seven parcels within the FFO. See Appendix A for legal descriptions and Appendix D for maps of the parcels. Additional information is also contained in the Interdisciplinary Team Checklist (Appendix D).

### **3.3    *RESOURCES/ISSUES BROUGHT FORWARD FOR ANALYSIS***

#### **3.3.1    *Air Quality***

Air quality is affected by various natural and anthropogenic factors. Industrial sources such as oil and gas extraction activities within Central Utah contribute to local and regional air pollution.

Air pollutants generated by motor vehicles include tailpipe emissions and dust from travel over dry, unpaved road surfaces. Strong winds can generate substantial amounts of windblown dust.

Air pollution emissions are characterized as point, area, or mobile. Point sources are large, stationary facilities such as power plants and manufacturing facilities and are accounted for on a facility-by-facility basis. Area sources are smaller stationary sources and, due to their greater number, are accounted for by classes. Production emissions from an oil and gas well and dust

from construction of a well pad would be considered area source emissions. Mobile sources consist of non-stationary sources such as cars and trucks. Mobile emissions are further divided into on-road and off-road sources. Engine exhaust from truck traffic to and from oil and gas locations would be considered on-road mobile emissions. Engine exhaust from drilling operations would be considered off road mobile emissions.

The Clean Air Act required the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The Utah Division of Air Quality (UDAQ) is responsible to ensure compliance with the NAAQS within the state of Utah. Table 1 shows NAAQS for the EPA designated criteria pollutants. (EPA 2016)

**Table 1: National Ambient Air Quality Standards**

Pollutant	Primary/ Secondary	Averaging Time	Level*	Form
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3</sup> <sup>(1)</sup>	Not to be exceeded
Nitrogen Dioxide (NO <sub>2</sub> )	primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary	1 year	53 ppb <sup>(2)</sup>	Annual Mean
Ozone (O <sub>3</sub> )	primary and secondary	8 hours	0.070 ppm <sup>(3)</sup>	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Fine Particulate Matter (PM <sub>2.5</sub> )	primary	1 year	12.0 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
	secondary	1 year	15.0 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
	primary and secondary	24 hours	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
Respirable Particulate Matter (PM <sub>10</sub> )	primary and secondary	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO <sub>2</sub> )	primary	1 hour	75 ppb <sup>(4)</sup>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

\* Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m<sup>3</sup>).

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m<sup>3</sup> as a calendar quarter average) also remain in effect.

(2) The level of the annual NO<sub>2</sub> standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O<sub>3</sub> standards additionally remain in effect in some areas. Revocation of the previous (2008) O<sub>3</sub> standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO<sub>2</sub> standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current

Pollutant	Primary/ Secondary	Averaging Time	Level*	Form
(2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO <sub>2</sub> standards or is not meeting the requirements of a SIP call under the previous SO <sub>2</sub> standards [40 CFR 50.4(3)]. A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.				

Air quality in the area of the parcels is classified as attainment or unclassifiable for the NAAQS, State Department of Environmental Quality and the Division of Air Quality Standards. (UDAQ 2017)

An “unclassified” designation indicates that sufficient air monitoring is not available to make a determination as to attainment status. For regulatory purposes an unclassified county is considered the same as attainment. The UDAQ 2017 annual report includes a 2014 emissions inventory (EI) by county (Table 2).

**Table 2. 2014 Triennial Inventory (tons/year)**

County	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOC
Juab	10,975.10	2,460.04	3,108.58	745.78	17.55	26,542.93

Although not listed as a NAAQS criteria pollutant, volatile organic compounds (VOC) are also considered in this EA as they, along with NO<sub>x</sub>, are precursors to the formation of ozone and are listed by UDAQ as a pollutant that, if the threshold is exceeded, would require an approval order.

This EA addresses mobile off road engine exhaust emissions from drilling activities, venting and flaring emissions from completion and testing activities, emissions from ongoing production activities, and fugitive dust emissions, specifically emissions of total particulate matter of less than 10 micrometers (PM<sub>10</sub>), from heavy construction operations. PM<sub>10</sub> emissions are converted from total suspended particulates by applying a conversion factor of 25%. PM<sub>2.5</sub> is not specifically addressed as it is included as a component of PM<sub>10</sub>. PM<sub>2.5</sub> is converted from PM<sub>10</sub> by applying a conversion factor of 15%. This EA does not consider mobile on road emissions as they are dispersed, sporadic, temporary, and not likely to cause or contribute to an exceedance of the NAAQS.

### 3.3.2. Greenhouse Gas Emissions/Climate Change

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years such as temperature and precipitation. Climate change includes both historic and predicted climate shifts that are beyond normal weather variations.

Climate change is defined by the Intergovernmental Panel on Climate Change (IPCC) as “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use” (IPCC 2013).

The IPCC states: “Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased” (IPCC 2013). The global average surface temperature has increased approximately 1.5°F from 1880 to 2012 (IPCC 2013). Warming has occurred on land surfaces, oceans and other water bodies, and in the troposphere (lowest layer of earth’s atmosphere, up to 4-12 miles above the earth).

Earth’s atmosphere has a natural greenhouse effect wherein naturally occurring gases such as water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and fluorinated gases<sup>2</sup> absorb and retain heat. Without the natural greenhouse effect, earth would be approximately 60°F cooler (URS 2010). Current ongoing global climate change is caused, in part, by the atmospheric buildup of GHGs, which may persist for decades or even centuries. Based on their concentrations, retentions, and strengths, GHGs vary in how they act and remain in the atmosphere. (EPA 2017b). Each GHG has a global warming potential (GWP) that accounts for the intensity of each GHG’s heat trapping effect and its longevity in the atmosphere.

The buildup of GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and other less common gases since the start of the industrial revolution has substantially increased atmospheric concentrations of these compounds compared to background levels. At such elevated concentrations, these compounds absorb more energy from the earth’s surface and re-emit a larger portion of the earth’s heat back to the earth rather than allowing the heat to escape into space than would be the case under more natural conditions of background GHG concentrations.

A number of activities contribute to the phenomenon of climate change, including emissions of GHGs (especially CO<sub>2</sub> and CH<sub>4</sub>) from fossil fuel development, large wildfires, activities using combustion engines, changes to the natural carbon cycle, and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a sustained climatic impact over different temporal scales due to their differences in global warming potential (described above) and lifespans in the atmosphere. For example, CO<sub>2</sub> may last 50 to 200 years in the atmosphere while CH<sub>4</sub> has an average atmospheric lifetime of 12 years (URS 2010).

The IPCC concluded that “warming of the climate system is unequivocal” and “most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations.” (IPCC 2007). Extensive research and development efforts are underway in the field of carbon capture and sequestration (CCS) technology, which could help direct management strategies in the future. The IPCC has identified a target worldwide “carbon budget” to estimate the amount of CO<sub>2</sub> the world can emit while still having a likely chance of limiting global temperature rise to 2°C above pre-industrial levels. The international community estimates this budget to be 1 trillion tonnes of carbon (WRI 2016).

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (NASA 2018). In 2001, the IPCC (2007) indicated that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National

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<sup>2</sup> Accessed online at: <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

Academy of Sciences (Hansen, et al. 2006) has confirmed these findings, but also indicated that there are uncertainties regarding how climate change may affect different regions. Observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Data indicate that northern latitudes (above 24° N) have exhibited temperature increases of nearly 1.2°C (2.1°F) since 1900, with nearly a 1.0°C (1.8°F) increase since 1970 alone. It also shows temperature and precipitation trends for the conterminous United States. For both parameters, varying rates of change are shown, but overall increases in both temperature and precipitation.

As stated by EPA, (EPA 2017c) the GWP was developed to allow comparisons of the global warming impacts of different GHGs. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO<sub>2</sub>. Shown in Table 3, the GHGs are presented using the unit of Metric Tons of CO<sub>2</sub> equivalent (MT CO<sub>2e</sub>),<sup>3</sup> a metric to express the impact of each different GHG in terms of the amount of CO<sub>2</sub> making it possible to express GHGs as a single number. For example, 1 ton of CH<sub>4</sub> would be equal to 25 tons of CO<sub>2</sub> equivalent, because it has a GWP over 25 times that of CO<sub>2</sub>. The GWP accounts for the intensity of each GHG's heat trapping effect and its longevity in the atmosphere. The GWP provides a method to quantify the cumulative effects of multiple GHGs released into the atmosphere by calculating CO<sub>2</sub> equivalent for the GHGs.

Table 3. Greenhouse Gases and Their Global Warming Potentials.

Pollutant	Carbon Dioxide (CO <sub>2</sub> )	Methane (CH <sub>4</sub> )	Nitrous Oxide (N <sub>2</sub> O)	Hydrofluorocarbons (HFCs)	Perfluorocarbons (PFCs)	Sulfur hexafluoride (SF <sub>6</sub> )
GWP	1	25	298	Up to 14,800	7,390-12,200	22,800

Because GHGs circulate freely throughout Earth's atmosphere, climate change is a global issue. The largest component of global anthropogenic GHG emissions is CO<sub>2</sub>. Global anthropogenic carbon emissions reached about 7,000,000,000 MT per year in 2000 and an estimated 9,170,000,000 MT per year in 2010 (Boden, Marland and Andres 2013). Oil and gas production contributes to GHGs such as CO<sub>2</sub> and CH<sub>4</sub>. Natural gas systems were the second largest anthropogenic source category of CH<sub>4</sub> emissions in the United States in 2015 with 162.4 MMT CO<sub>2e</sub> of CH<sub>4</sub> emitted into the atmosphere. Those emissions have decreased by 31.6 MMT CO<sub>2e</sub> (16.3 percent) since 1990 (EPA 2017a).

### 3.3.3. Wildlife

#### **Sensitive Animal Species**

Animal species listed on the Utah BLM Sensitive Fish and Wildlife Species List – December 20, 2010 were reviewed to determine potential occurrence on the lease parcels. Species with suitable habitat within some or all of the parcels include ferruginous hawk (*Buteo regalis*), burrowing owl (*Athene cunicularia*), and kit fox (*Vulpes macrotis*). Ferruginous hawk and burrowing owl are discussed in detail under the migratory bird section of this Environmental Assessment.

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<sup>3</sup> GHGs can also be measured as Million Metric Tons (MMT CO<sub>2e</sub>).

Kit fox occur in open desert, shrubby or shrub-grass, playa/salt flats, prairie, and plains habitats. In the Great Basin, kit fox are found in shadscale, greasewood, and sagebrush communities. All parcels contain kit fox habitat. In Utah, kit fox have occupied communities of mountain sagebrush, black sagebrush, creosote bush, and shadscale. They have also been reported in rabbitbrush, greasewood, horsebrush, winterfat, shadscale, and shrubby buckwheat with kochia, seepweed, and Indian ricegrass. During a 2 year study in Utah, 75 percent of the 92 kit foxes reported occurred in areas with less than 20 percent vegetation cover and light-colored loamy soils. Kit fox generally avoid rugged terrain with slopes greater than 5 percent.

Kit fox have definite preferences and permanent ties to specific den sites. They tend to select sites in barren areas with silty, clay soil which are higher than the surrounding terrain (UDWR, 2010). In Utah, most dens are on flat, well-drained uplands. The low-stature vegetation and open ground around kit fox dens may reduce the frequency of ambush by kit fox predators.

Kit fox dens usually have multiple entrances and may be 3 to 6 meters long, reaching 127 centimeters in depth. Old dens may have as many as seven entrances and the opening is usually narrow in order to prevent badgers and coyotes from entering the den. Several dens may be used. Kit fox move from one den to another, especially in summer when pups are present. When kit fox populations are high, several active dens may be located within a single home range; but these dens will be used only by members of the same family group. Pairs or individuals may use up to 10 dens clustered in a 0.8- to 1.2-hectare area.

#### **3.3.4. Migratory Birds including Raptors**

A variety of migratory bird species, including raptors such as ferruginous hawks and burrowing owls, use the habitats located within the parcels for breeding, nesting, foraging, migrating, and wintering. Migratory birds are protected under the Migratory Bird Treaty Act of 1918 (MBTA). The MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products unless it is a permitted action. The Executive Order 13186 sets forth the responsibilities of Federal agencies to further implement provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that Federal actions evaluate the effects of proposed actions and agency plans on migratory birds. BLM's role under the Migratory Bird Treaty Act (MBTA) is to adequately manage migratory birds and their habitats, and to reduce the likelihood of a sensitive bird species from being listed under the Endangered Species Act.

In addition, a Memorandum of Understanding (MOU) between the BLM and United States Fish and Wildlife Service (USFWS) (BLM MOU WO-230-2010-04) provides BLM further direction for project-level NEPA guidance for meeting MBTA conservation and compliance. The emphasis is on identifying sensitive bird species and habitats through the USFWS 2008 Birds of Conservation Concern (BCC) Species List (BLM 2007), the Utah Partners in Flight (UPIF) Species List, and BLM Sensitive Species List. The MOU direction includes evaluating the effects of BLM's actions on these species during the NEPA process; including effects on bird population and habitat. The BLM is to implement approaches to lessen the likelihood of impacts

by having project alternatives that avoid, minimize and mitigate adverse impacts for migratory birds and the habitats they depend upon that are most likely to be present in the Project Area.

The lease parcels are within the USFWS Bird Conservation Region 9, Great Basin (USFWS 2008), which is a large and complex region which includes the Northern Basin and Range, Columbia Plateau, and eastern slope of the Cascade Range. Dominant vegetation communities include grasslands, sagebrush and xeric shrubs in the low elevation valleys, with pinyon pine-juniper woodlands and ponderosa pine forests in the higher elevations. Large lowland wetlands are important within this region such as the Great Salt Lake and associated marshes.

USFWS Birds of conservation concern which may utilize habitats within the parcels include, bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), long-billed curlew (*Numenius americanus*), loggerhead shrike (*Lanius ludovicianus*), pinyon jay (*Gymnorhinus cyanocephalus*), sage thrasher (*Oreoscoptes montanus*), green-tailed towhee (*Pipilo chlorurus*), Brewer's sparrow (*Spizella breweri*), and sage sparrow (*amphispiza belli*).

Utah's Partners in Flight priority species which have primary breeding habitats within the parcels include, black-throated gray warbler (*Dendroica nigrescens*), ferruginous hawk (*Buteo regalis*), and gray vireo (*Vireo vicinior*).

The migratory bird nesting period in the lease parcels occurs from March 15 through July 15. Any exploration drilling, or development during this period would require that nest surveys be conducted by a qualified biologist and appropriate spatial and temporal buffers applied to fully mitigate any potential effects on nesting migratory birds.

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## **CHAPTER 4 ENVIRONMENTAL IMPACTS**

### **4.1 INTRODUCTION**

This chapter discusses the environmental consequences of implementing the alternatives described in Chapter 2. Under NEPA, actions with the potential to affect the quality of the human environment must be disclosed and analyzed in terms of direct and indirect impacts—whether beneficial or adverse and short or long term—as well as cumulative impacts. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action but occur later or farther away from the resource. Beneficial effects are those that involve a positive change in the condition or appearance of a resource or a change that moves the resource toward a desired condition. Adverse effects involve a change that moves the resource away from a desired condition or detracts from its appearance or condition. Cumulative impacts are the effects on the environment that result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions.

#### **No Action Alternative**

The No Action Alternative is used as the baseline for comparison with the Proposed Action. Under the No Action Alternative, the seven parcels totaling (8,832.13 acres) would not be leased. There would be no subsequent environmental impacts from oil or gas construction, drilling, and production activities. The No Action Alternative would result in the continuation of the current land and resource uses in the proposed lease areas.

The BLM assumes that the No Action Alternative (no lease option) may result in a slight reduction in domestic production of oil and gas. This reduction would diminish federal and state royalty income, and increase the potential for federal lands to be drained by wells on adjacent private or state lands. The public's demand for oil and gas is not expected to change; oil and gas consumption is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demographics, and weather or climate. If the parcels are not leased, energy demand would continue to be met by other sources such as imported fuel, alternative energy sources (e.g., wind, solar), and other domestic fuel production. This displacement of supply could offset any reductions in emissions and disturbance achieved by not leasing the subject tracts in the short term.

The No Action Alternative would not meet the purpose and need for the Proposed Action.

### **4.2 Direct from Potential Development**

The issuance of leases would not produce direct impacts because leasing is administrative in nature. However, the issuance of a lease does convey an expectation that exploration and development would occur as indirect and cumulative impacts as a result of leasing the parcels. Indirect Impacts from leasing are assessed from the RFD described in Section 2.2. If exploration occurs, short-term impacts would be stabilized or managed rapidly (within two to five years); long-term impacts are those that would substantially remain for more than five years.

## **4.3 Indirect Impacts from Potential Development**

### **4.3.1 Air Quality**

#### **4.3.1.1 Indirect Impacts of No Action Alternative**

The No Action Alternative would result in no indirect impact to the air quality because the parcels would not be leased or developed.

#### **4.3.1.2 Indirect Impacts of Proposed Action Alternative**

Should the parcels be offered and leases issued, development of those leases could impact air quality conditions.

At the leasing stage, specific information regarding the location, extent, and the operating procedures and technologies that might be utilized for oil and/or gas development operations on the subject lease parcels does not exist. As such, it is not possible to accurately estimate potential air quality impacts with computer modeling for the lease sale project due to the variation in emission control technologies as well as construction, drilling, and production technologies applicable to oil versus gas production and utilized by various operators, so this discussion remains qualitative.

Prior to authorizing specific proposed projects on the subject lease parcels, quantitative computer modeling using project specific emission factors and planned development parameters (including specific emission source locations) may be conducted to adequately analyze direct and indirect potential air quality impacts. In conducting subsequent project specific analysis BLM will follow the policy and procedures of the National Interagency MOU Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions through NEPA, and the FLAG 2010 air quality guidance document. Air quality dispersion modeling which may be required includes impact analysis for demonstrating compliance with the NAAQS, plus analysis of impacts to Air Quality Related Values (i.e. deposition, visibility), particularly as they might affect regional Class 1 areas (national parks and wilderness areas).

An oil or gas well, including the act of drilling, is considered to be a minor source under the Clean Air Act. Minor sources are not controlled by regulatory agencies responsible for implementing the Clean Air Act (Title V operating permit requirements). In addition, control technology is not required by regulatory agencies at this point, since all of the parcels occur in NAAQS attainment areas. Different emission sources would result from the two site specific lease development phases: well development and well production.

Well development includes emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. NO<sub>x</sub>, SO<sub>2</sub>, and CO would be emitted from vehicle tailpipes. Fugitive dust concentrations would increase with additional vehicle traffic on unpaved roads and from wind erosion in areas of soil disturbance. Drill rig and fracturing engine operations would result mainly in NO<sub>x</sub> and CO emissions, with lesser amounts of SO<sub>2</sub>. These temporary emissions would be short-term during the drilling and completion times.

During well production there are continuous emissions from separators, condensate storage tanks, and daily tailpipe and fugitive dust emissions from operations traffic. During the operational phase of the Proposed Action, NO<sub>x</sub>, CO, VOC, and HAP emissions would result

from the long-term operation of condensate storage tank vents, and well pad separators. Additionally, road dust ( $PM_{10}$  and  $PM_{2.5}$ ) would be produced by vehicles servicing the wells.

Project emissions of ozone precursors, whether generated by construction and drilling operations, or by production operations, would be dispersed and/ or diluted to the extent where any local ozone impacts from the Proposed Action would be indistinguishable from background or cumulative conditions. The primary sources of hazardous air pollutants (HAPs) are from oil storage tanks and smaller amounts from other production equipment. Small amounts of HAPs are emitted by construction equipment. However, these emissions are estimated to be less than 1 ton per year. Based on the negligible amount of project-specific emissions, the Proposed Action is not likely to violate, or otherwise contribute to any violation of any applicable air quality standard, and may only contribute a small amount to any projected future potential exceedance of any applicable air quality standards.

The construction, drilling, completion, testing, and production of an oil and gas well could result in various emissions that affect air quality. Construction activities result in emissions of  $PM_{10}$ . Well drilling activities result in engine exhaust emissions of  $NO_x$ , CO, and VOC. Completion and testing of the well result in emissions of VOC,  $NO_x$ , and CO. Ongoing production results in the emission of  $NO_x$ , CO, VOC, and  $PM_{10}$ .

Due to the very small level of anticipated development, an emissions inventory (EI) has not been conducted for this lease sale. However, a typical oil and gas well EI is estimated is presented in Table 4 and for the purpose of this analysis it is based on the following assumptions:

- Each oil and gas well would cause 6 acres of surface disturbance. This acreage includes access.
- Construction activity for each well is assumed to be 10 days. It is further assumed that, based on the acreage disturbed, 4.5 days would be spent in well pad construction and 5.5 days would be spent in road and pipeline construction.
- Control efficiency of 25% for dust suppression would be achieved as a result of compliance with Utah Air Quality regulation R307-205.
- Post construction particulate matter (dust) emissions are likely to occur on a short term basis due to loss of vegetation within the construction and staging areas. Assuming appropriate interim reclamation, these emissions are likely to be minimal to negligible and will not be considered in this EA.
- Drilling operations would require 14 days.
- Completions and testing operations would require 3 days.
- Off road mobile exhaust emissions from heavy equipment during construction activities and on road mobile emissions would not be considered as they are dispersed, sporadic, temporary, and not likely to cause or contribute to exceedance of the NAAQS.

Table 4.

	Construction Emissions (Tons)	Drilling Emissions (Tons)			Completions Emissions (Tons)				Ongoing Production Emissions (Tons/year)			
	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>
Typical Well	0.34	13.31	1.83	0.23	0.85	0.07	0.07	0.00	0.01	0.01	6.44	0.00000
Sub Total	0.34	13.31	1.83	0.23	0.85	0.07	0.07	0.00	0.01	0.01	6.44	0.00000
					PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC				
Activity Emissions (Total emissions for drilling and completion the well)					0.34	13.37	1.89	1.08	Tons			
Production Emissions (Ongoing annual emissions for the well)					0.00000	0.01	0.01	6.44	tpy			

Based on the emissions estimates contained in Table 4 substantial air resource impacts are not anticipated as a result of this leasing action, and no further analysis or modeling is warranted. Emissions resulting from the September 2018 Oil and Gas Lease Sale are not likely to result in major impacts to air quality nor are they likely to cause a violation of the NAAQS.

Best management practices (BMP) would be developed to address oil and gas development emissions that may have an effect on regional ozone formation and these BMP would be required at the time of development on any of the leases (UT-LN-96). The regional ozone formation BMPs are:

- All internal combustion equipment would be kept in good working order.
- Water or other approved dust suppressants would be used at construction sites and along roads, as determined appropriate by the Authorized Officer.
- Open burning of garbage or refuse would not occur at well sites or other facilities.
- Drill rigs would be equipped with Tier II or better diesel engines.
- Vent emissions from stock tanks and natural gas TEG dehydrators would be controlled by routing the emissions to a flare or similar control device which would reduce emissions by 95% or greater.
- Low bleed or no bleed pneumatics would be installed on separator dump valves and other controllers.
- During completion, flaring would be limited as much as possible. Production equipment and gathering lines would be installed as soon as possible.

- Well site telemetry would be utilized as feasible for production operations.
- Stationary internal combustion engine would comply with the following standards: 2g NOx/bhp-hr for engines <300HP; and 1g NOx/bhp-hr for engines >300HP.

An air quality BMP which discusses the amounts of NO<sub>x</sub> emission per horse-power hour based on internal combustion engine size, would be attached to all parcels. A lease notice (UT-LN-101) would be attached to all leases and would consist of the following provisions:

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 grams of NOx per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gram of NOx per horsepower-hour. Emission factors for activities of the Proposed Action were based on information contained in the EPA's Emission Factors & AP 42, Volume I, Fifth Edition (EPA 2018a), available at: <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors>. The production emissions from oil storage tanks was estimated based on the emission factor contained in the Colorado Department of Public Health and Environment PS Memo 05-01, Oil & Gas Atmospheric Condensate Storage Tank Batteries Regulatory Definitions and Permitting Guidance (CDPHE 2009), available at: [https://www.colorado.gov/pacific/sites/default/files/AP\\_Memo-05-01-Oil-and-Gas-Condensate-Tank-Batteries-Guidance.pdf](https://www.colorado.gov/pacific/sites/default/files/AP_Memo-05-01-Oil-and-Gas-Condensate-Tank-Batteries-Guidance.pdf).

Additional air quality control measures may be warranted and imposed at the APD stage. The following leases notices would be added to all parcels:

#### **UT-LN-99 (Regional Ozone Formation Controls)**

To mitigate any potential impact oil and gas development emissions may have on regional ozone formation, the following BMPs would be required for any development projects:

- Tier II or better drilling rig engines
- Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines <300HP and 1g NOx/bhp-hr for engines >300HP
- Low-bleed or no-bleed pneumatic pump valves
- Dehydrator VOC emission controls to +95% efficiency
- Tank VOC emission controls to +95% efficiency

#### **UT-LN-102 (Air Quality Analysis)**

The lessee/operator is given notice that prior to project-specific approval, additional air quality analyses may be required to comply with the National Environmental Policy Act, Federal Land Policy Management Act, and/or other applicable laws and regulations. Analyses may include dispersion modeling and/or photochemical modeling for deposition and visibility impacts

analysis, control equipment determinations, and/or emission inventory development. These analyses may result in the imposition of additional project-specific air quality control measures.

### **4.3.2 Greenhouse Gas Emissions/Climate Change**

#### ***4.3.2.1 Indirect Impacts of No Action Alternative***

The No Action Alternative would result in no GHG emissions and no impacts to climate change from the proposed lease parcels because they would not be offered at the September 2018 oil and gas lease sale.

#### ***4.3.2.2 Indirect Impacts of Proposed Action Alternative***

At this time, the BLM is disclosing the likelihood and potential magnitude of indirect and downstream GHG emissions but is not able to disclose potential impacts to climate change from the estimated downstream GHG emissions related to the proposed lease sale. The inconsistency in results of scientific models used to predict climate change at the global scale, coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. It is therefore beyond the scope of existing science to relate a specific source of GHG emission or sequestration with the creation or mitigation of any specific climate-related environmental effects. Although the effects of GHG emissions in the global aggregate are well-documented, it is currently impossible to determine what specific effect GHG emissions resulting from a particular activity might have on the environment. Analysis of impacts at this leasing stage would be speculative and would be not be based “reasonable projections and assumptions”.

### **Availability of Input Data**

There are many uncertain factors that affect the potential for GHG emissions estimates: a lease may not be sold, so no GHG emissions would be expected; a lease may be sold but never explored, so again there would be no GHG emissions; a lease may be sold and an exploratory well drilled that showed no development potential, so minimal GHG emissions would occur; or a lease may be sold, explored, and developed. GHG emission estimates also would change due to specific production volumes and variability in flaring, construction, and transportation. At this stage, it is difficult to discern with certainty what end uses for the fuels extracted from a particular leasehold might be reasonably foreseeable.

Accurate assessments of GHG emissions are not possible at the leasing stage since emissions are dependent on factors such as specific equipment used and duration of use, applicant-committed emission controls, and the expected production rate from the oil or gas well. These factors are not known at the leasing stage. Furthermore, additional infrastructure such as pipelines, roads, compressor stations, gas plants and evaporation ponds are also not reasonably foreseeable at the leasing stage and are dependent on the level of development that may occur if a parcel is leased.

GHG emissions are a potential effect of the subsequent fluid mineral exploration and/or development of any leases that are issued. Oil and gas activities may lead to the installation and production of new wells, which may consequently produce an increase in GHG emissions. The

primary sources of GHG emissions related to exploration or development could include the following:

- Fossil fuel combustion for construction and operation of oil and gas facilities – vehicles driving to and from production sites, engines that drive drill rigs, etc. These produce CO<sub>2</sub> in quantities that vary depending on the age, types, and conditions of the equipment as well as the targeted formation, locations of wells with respect to processing facilities and pipelines, and other site-specific factors;
- Fugitive CH<sub>4</sub> – CH<sub>4</sub> that escapes from wells (both gas and oil), oil storage, and various types of processing equipment. This is a source of global CH<sub>4</sub> emissions. These emissions have been estimated for various aspects of the energy sector, and starting in 2011, producers are required under 40 CFR 98, to estimate and report their CH<sub>4</sub> emissions to the EPA; and
- Combustion of produced oil and gas – it is assumed that future operations would produce marketable quantities of oil and/or gas. Combustion of the oil and/or gas would release CO<sub>2</sub> into the atmosphere.

In recent years, many states, tribes, and other organizations have initiated GHG inventories, tallying GHG emissions by economic sector. The U.S. EPA provides links to statewide GHG emissions inventories (EPA 2017a). Estimates of GHG emissions were made by incorporating production and consumption data and emissions factors [Energy Information Administration (EIA 2018), Utah Division of Oil Gas and Mining (UDOGM 2017), and (EPA 2018a)] to equate potential activities to GHG emissions in the form of carbon dioxide equivalent (CO<sub>2e</sub>). Some additional data, including the projected volume of oil or natural gas produced for an average well, number of wells (as well as other factors described in Section 3.3.1 Air Quality) were used to provide GHG estimates.

### **Emissions from potential development**

Total Greenhouse Gas Warming Potential (GWP), which includes direct emissions of carbon dioxide, methane, and nitrous oxide from an oil or gas producing well is estimated based on using a generic emissions calculator resulting in emissions of 1,192 tons per year CO<sub>2</sub>-e for a single operational well, and 2,305 tons per year CO<sub>2</sub>-e for a single drill rig. Accurate assessments of GHG emissions are not possible at the leasing stage since emissions are dependent on factors such as specific equipment used and duration of use, applicant-committed emission controls, and the expected production rate from the oil or gas well. These factors are not known at the leasing stage. Furthermore, additional infrastructure such as pipelines, roads, compressor stations, gas plants and evaporation ponds are also not reasonably foreseeable at the leasing stage and are dependent on the level of development that may occur if the parcels are leased.

### **Downstream Greenhouse Gas Emissions**

Downstream GHG emissions are estimated based on an average cumulative production rate of 2,162,227 barrels of oil over the life of a well, based on the production history for the oldest producing well in the Covenant field, the Kings Meadow Ranches 17-1 (UDOGM 2017, 1151). Only oil production is estimated, as it is not anticipated any gas production will occur on these parcels. Indirect GHG emissions are also only calculated for carbon dioxide based on

combustion of the product.

Using an RFD of one producing well for the lease sale and an EPA emissions factor of 0.43 Metric tons of CO<sub>2</sub> per Barrel, (EPA 2018b) indirect GHG emissions can be speculated at 929,758 metric tons. Actual GHG emissions may range from zero (assuming no lease parcels sold or developed) to an indeterminate upper range based on realized production rates, control technology, and physical characteristics of any oil produced.

As it is not possible to assign a “significance” value or impact to these numbers, the emissions estimates themselves are presented as a proxy for impact. With respect to the rough estimates of indirect CO<sub>2</sub> emissions, it should be noted that it is difficult to discern with certainty what end uses for the fuels extracted from a particular leasehold might be reasonably foreseeable. For instance, some end uses of fossil fuels extracted from Federal leases include: combustion of transportation fuels, fuel oils for heating and electricity generation, as well as production of asphalt and road oil, and the feedstocks used to make chemicals, plastics, and synthetic materials. At this time, there is some uncertainty with regard to the actual development that may occur.

### **Uncertainties of GHG Calculations**

Although this EA presents a quantified estimate of potential GHG emissions associated with reasonably foreseeable oil and gas development, there is significant uncertainty in GHG emission estimates due to uncertainties with regard to eventual production volumes and variability in flaring, construction, and transportation.

The estimates above provide a complete GHG lifecycle of a well from site inspection to possible indirect emissions through combustion. A rough estimate was possible using publicly available information and using estimates from future production for reasonably foreseeable development.

### **Monetizing Costs and Benefits: Social Cost of Greenhouse Gases**

The BLM finds that including monetary estimates of the social cost of GHGs (SC GHG) in its NEPA analysis for this Proposed Action would not be useful. Because the BLM is not doing a cost-benefit analysis in this NEPA document, we do not believe monetizing only SCC GHG would be instructive.

### **Possible Future Best Management Practices, Standard Operating Procedures, and/or Mitigation Measures**

The BLM holds regulatory jurisdiction over portions of natural gas and petroleum systems, identified in the USEPA *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (EPA 2017a). Exercise of this regulatory jurisdiction has led to development of Best Management Practices (BMPs), which are state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner. The BLM encourages industry to incorporate and implement BMPs to reduce impacts to air quality through reduction of emissions, surface disturbances, and dust from field production and operations. Typical measures are mentioned below.

- Open burning of garbage or refuse would not occur at well sites or other facilities;

- Drill rigs would be equipped with Tier II or better diesel engines;
- Vent emissions from stock tanks and natural gas TEG dehydrators would be controlled by routing the emissions to a flare or similar control device which would reduce emissions by 95% or greater;
- All internal combustion equipment would be kept in good working order;
- Flared hydrocarbon gases at high temperatures in order to reduce emissions of incomplete combustion through the use of multi-chamber combustors;
- Watering dirt roads during periods of high use to reduce fugitive dust emissions;
- Co-location wells and production facilities to reduce new surface disturbances;
- Use of natural gas fired or electric drill rig engines;
- The use of selective catalytic reducers and low-sulfur fuel for diesel-fired drill rig engines;
- Adherence to BLM's Notice to Lessees' (NTL) 4a concerning the venting and flaring of gas on Federal leases for natural gas emissions that cannot be economically recovered;
- Protecting fracturing sand from wind erosion;
- Implementation of directional drilling and horizontal completion technologies whereby one well provides access to petroleum resources that would normally require the drilling of several vertical wellbores;
- Requiring that vapor recovery systems be maintained and functional in areas where petroleum liquids are stored; and
- Performing interim reclamation to reclaim areas of the pad not required for production facilities and to reduce the amount of dust from the pads.

Additionally, the BLM encourages oil and natural gas companies to adopt proven, cost-effective technologies and practices that improve operational efficiency and reduce natural gas emissions. In October 2012, USEPA promulgated air quality regulations for completion of hydraulically

fractured gas wells (EPA 2011). These rules required air pollution mitigation measures that reduced the emissions of volatile organic compounds during gas well completions. Mitigation included utilizing a process known as a “green” completion in which natural gas brought up during flowback is captured in tanks rather than in open fluid pits. Among other measures to reduce emissions include the USEPA’s Natural Gas STAR program. The USEPA U.S. inventory data shows that industry’s implementation of BMPs proposed by the program has reduced emissions from oil and gas exploration and development (EPA 2017a)

### **4.3.3 Wildlife**

#### **4.3.3.1 *Indirect Impacts of No Action Alternative*** **Sensitive Animal Species**

Under the No Action Alternative leasing, exploration, and development would not occur on any of the lease parcels. There would be no change in the effected environment and therefore no effects on sensitive animal species.

#### **4.3.3.2 *Indirect Impacts of Proposed Action Alternative*** **Sensitive Animal Species**

To inform lessees of potential COAs should Sensitive Species be found, all parcels will have the following lease notice UT-LN-49 UTAH SENSITIVE SPECIES added:

“No surface use or otherwise disruptive activity would be allowed that would result in direct disturbance to populations or individual special status plant and animal species, including those listed on the BLM sensitive species list and the Utah sensitive species list. The lessee/operator is also given notice that lands in this parcel have been identified as containing potential habitat for species on the Utah Sensitive Species List. Modifications to the Surface Use Plan of Operations may be required in order to protect these resources from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, Migratory Bird Treaty Act and 43 CFR 3101.1-2.”

Implementation of this lease notice could include a variety of site specific actions which may include spatial or temporal avoidance requirements or modification to proposals at the APD stage of exploration or within a submitted Surface Use Plan. The operator will reclaim surface disturbance activities in accordance to the reclamation BMPs in the gold book. This would restore habitat that may have been fragmented, altered, or temporarily lost.

Should the parcels be offered and leases issued, development of those leases could impact Kit Foxes Direct effects to kit fox under the RFD may include morality, pup abandonment, or physical displacement during crucial time periods. Indirect effects may include den abandonment, and habitat fragmentation, alteration, or loss. During exploration these effects are expected to be short in duration (i.e., 3-5 years) and low in intensity as only the minimum amount of surface disturbance will be permitted.

The implementation of UT-LN-49 and environmental BMPs are expected to fully mitigate any and all potential direct or indirect effects to kit fox or their habitat.

#### ***4.3.3.3 Indirect Impacts of No Action Alternative***

##### **Migratory Birds**

Under the No Action Alternative leasing, exploration, and development would not occur on any of the lease parcels. There would be no change in the effected environment and therefore no effects on migratory bird species.

#### ***4.3.3.4 Indirect Impacts of Proposed Action Alternative***

##### **Migratory Birds**

Section 3.3.4, Migratory Birds, identifies the migratory birds that are most likely to inhabit the parcels based on known occurrence and available habitats. As discussed previously, migratory birds receive protections from “take” under the Migratory Bird Treaty Act and Executive Order (EO) 13186.

Oil and gas construction and development activities that may follow lease issuance could affect migratory birds nesting success. Potential direct effects may include nest destruction, nest abandonment, and chick mortality. Potential indirect effects from exploration and development may include habitat loss or habitat fragmentation as a result of surface disturbance. During exploration activities these effects would be spatially minimized through design features and short in duration (e.g., 1-3 years). During production these effects would be spatially minimized however, the duration of the effects are expected to be present while the well is in production (e.g., 10-30 years).

A lease notice for the protection of raptors, including ferruginous hawks and burrowing owls, which requires nesting surveys whenever surface disturbance and/or occupancy are proposed within the species specific spatial and temporal buffers will be added to all parcels. If any active raptor nests are documented, the appropriate spatial buffers and seasonal timing restrictions would be applied as defined in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS 2002). This lease notice is expected to fully mitigate any direct or indirect effects to nesting raptor species. Additional lease notices and stipulations that would also be applied to the subject lease parcels include: UT-LN-36 (Bald Eagle Habitat), UT-LN-37 (Bald Eagle Habitat), UT-LN-40 (Golden Eagle Habitat), UT-LN-44 (Raptors), UT-LN-45 (Migratory Birds), and. Corresponding Conditions of Approval added to permits during exploration and development, would be expected to fully mitigate any potential direct or indirect effects. . n.

## ***4.4 CUMULATIVE IMPACTS***

### **4.4.1 Introduction**

NEPA requires federal agencies to consider the cumulative effects of proposals under their review. Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations 40 CFR §1508.7 as “the impact on the environment that results from the incremental

impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions.” The CEQ has stated that the “cumulative effects analyses should be conducted on the scale of human communities, landscapes, watersheds, or air-sheds” using the concept of “project impact zone” (i.e., the area that might be influenced by the Proposed Action).

Offering and issuing leases for the subject parcels, in itself, would not result in cumulative impacts to any resource. Nevertheless, future development of the leases could be an indirect effect of leasing. The RMP/EIS, provides the BLM’s analysis of cumulative effects of oil and gas development based on the RFD scenario. This analysis is hereby incorporated by reference and is available at <http://go.usa.gov/xnUHK>. The cumulative impacts analysis in the RMP/EIS accounted for the potential impacts of development of lease parcels in the planning area as well as past, present and reasonably foreseeable actions known at that time. This analysis expands upon the RMP/EIS analysis by incorporating new information.

#### **4.4.2 Past, Present, and Reasonably Foreseeable Future Actions**

##### **Past and Present Actions**

Past actions in the area occurred when Burnett Oil Company leased 3,280.090 acres for drilling oil and gas. A Notice of Staking was submitted by Pioneer Natural Resources to drill the two wells; the first one was in 2005 at T.0160S., R.0010W., Sec; 006, and was closed in 2016 (no production). The second one was in 2007 at T.0160S., R.0020W., Sec Various and closed in 2017. There are few actions that have occurred or are currently taking place on lands in and around the proposed lease parcels. Recreation activities including sightseeing, wildlife viewing, nature viewing, photography, hiking, horseback riding, ATV trail riding, and camping have and will continue to take place in the region. Grazing allotments are located within the proposed lease parcels.

##### **Reasonably Foreseeable Future Actions**

It is reasonably foreseeable that the recreation and grazing activities that are currently taking place will continue to take place into the future. Additionally, based on trends over the past several years, parcels in this area will continue to be nominated for oil and gas leases and potentially developed accordingly. Any existing leases in this area has potential for exploration and development. It is also possible that future rights-of-way may be granted.

#### **4.4.3 Cumulative Impacts**

##### **4.4.4 Air Quality**

The Cumulative Impact Analysis Area (CIAA) for air quality is Eastern Juab County. Cumulative impacts are incorporated by reference from the RFO RMP EIS (BLM 2008) and the BLM’s Air Resource Management Strategy Model (AECOM 2014). Based upon the relatively minor levels of oil and gas development and emissions anticipated for the proposed action, and the application of BMPs, it is unlikely that emissions from any subsequent development of the proposed leases would contribute to regional ozone formation in the project area, nor is it likely to contribute or cause exceedances of any NAAQS. Other emission contributors would continue at present rates such as construction, urban development, and personal vehicle use.

#### **4.4.5 Greenhouse Gas Emissions/Climate Change**

There are no boundaries with which to identify a CIAA for climate change. The proposed action could result in a slight incremental increase in GHG emissions, thus contribute to the global impacts. It is now well established that rising global atmospheric GHG emission concentrations are affecting the Earth's climate. These conclusions are built upon a scientific record that has been created with substantial contributions from the United States Global Change Research Program (USGCRP). Studies have projected the effects of increasing GHGs on many resources normally discussed in the NEPA process, including water availability, ocean acidity, sea-level rise, ecosystem functions, energy production, agriculture and food security, air quality and human health.

Based primarily on the scientific assessments of the USGCRP, the National Research Council, and the Intergovernmental Panel on Climate Change, in 2009 the Environmental Protection Agency (EPA) issued a finding that the changes in our climate caused by elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated to endanger the public health and public welfare of current and future generations. Broadly stated, the effects of climate change observed to date and projected to occur in the future include more frequent and intense heat waves, longer fire seasons and more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea-level rise, more intense storms, harm to water resources, harm to agriculture, ocean acidification, and harm to wildlife and ecosystems.

It is unknown if the No Action Alternative would result in decreased emissions, thus a reduced global climate change impact. It cannot be predicted if any oil and gas extracted from the proposed action would be combusted as fuel, or used as manufacturing material. In addition, other sources of fossil fuels may be extracted and combusted to meet the energy demands not met by extracting hydrocarbons from the parcels.

#### **4.4.6 Migratory Birds including Raptors**

There are no potential effects to migratory birds and raptors associated with the no action alternative. Not leasing the parcels would not add incrementally to the cumulatively effected environment of migratory birds and raptors.

Effects associated with the proposed action have been fully mitigated through the implementation of lease notices and lease stipulations. Therefore, there are no anticipated cumulative effects on migratory birds and raptors.

#### **4.4.7 Sensitive Animal Species**

There are no potential effects to kit fox associated with the no action alternative. Not leasing the parcels would not add incrementally to the cumulatively effected environment of kit fox.

Effects associated with the proposed action have been fully mitigated through the implementation of lease notices and lease stipulations. Therefore, there are no anticipated cumulative effects on kit fox.

## CHAPTER 5 COORDINATION AND CONSULTATION

Public and agency involvement has occurred as described below.

### ***5.1 LIST OF PERSONS, AGENCIES, AND ORGANIZATIONS CONSULTED***

<b>Name</b>	<b>Purpose &amp; Authorities for Consultation or Coordination</b>	<b>Findings &amp; Conclusions</b>
National Park Service	Coordinated with as leasing program partner.	Coordination is ongoing.
United States Fish and Wildlife Service	Coordinated with as leasing program partner.	Coordination is ongoing.
United States Forest Service	Coordinated with as leasing program partner.	Coordination is ongoing.
Public Lands Policy Coordination Office	Coordinated with as leasing program partner.	Coordination is ongoing.
Utah Division of Wildlife Resources	Coordinated with as leasing program partner.	Coordination is ongoing.
State Institutional Trust Lands Administration	Coordinated with as leasing program partner.	Coordination is ongoing.
State Historic Preservation Office	Consultation as required by NHPA (16 USC 1531)	Coordination is ongoing.
Yuba Lake State Park	Coordination with Yuba State Park as a leasing program partner.	Coordination is ongoing.
Hopi Tribe, Skull Valley Goshute Tribe, Kanosh Band of Paiutes, the Paiute Tribe of Utah, the Ute Indian Tribe, the Goshute Tribe, The Navajo Tribe, and the Kaibab Band of Paiute Indians	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Coordination is ongoing.

## 5.2 LIST OF PREPARERS AND PARTICIPANTS

Name	Title	Resource
R.B. Probert	NEPA Coordinator	Air Quality, Greenhouse Gas Emissions, Invasive/Non-native Species, Environmental Justice, Socio-Economics,
Trent Staheli	Wild Horses Specialist	Wild Horses and Burros
Tom Gibbons	Hydrologist	Floodplains, Water Resources/Quality Water Rights
Trevor Memmott	Fuels Specialist	Fire/Fuels Management
Todd Leeds	Geologist	Geology/Mineral Resources/Energy Production, Hazardous or Solid Wastes
Mace Crane	Wildlife Biologist	Migratory Birds, Special Status Animal Species, Wildlife,
David Whitaker	ESR Coordinator	Special Status Plant Species
Brian Taylor	Rangeland Management Specialist	Farmland, Wetlands/Riparian Zones Upland Vegetation, Livestock Operations
Robyn Yandell	Archeologist	Cultural Resources, Native American Religious Concerns,
Fredrick Braun	Realty Specialist	Realty Authorizations, Lands/Access
Teresa Frampton	Recreation Planner	Visual Resources, Areas of Critical Environmental Concern, Lands with Wilderness Characteristics, Wilderness Study Areas, Wild and Scenic Rivers, National Historic Trails, and Recreation
Kyle Monroe	Engineering Tech	Property Boundary Evaluation
Paul Caso	Rangeland Management Specialist	Soils
Eric Reid	Assistant Field Manager	Woodland/Forestry

## CHAPTER 6 REFERENCES, ACRONYMS, AND APPENDICES

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## 6.2 LIST OF ACRONYMS

APD	Application for Permit to Drill	NRHP	National Register of Historic Places
ARMPA	Utah Greater Sage-Grouse Approved Resource Management Plan	NSO	No Surface Occupancy
BLM	Bureau of Land Management		
BMP	Best Management Practice	OSHA	Occupational Safety and Health Act
BCR	Bird Conservation Region	ROD	Record of Decision
CFR	Code of Federal Regulations	ROW	Right of Way
CIAA	Cumulative Impact Analysis Area	RMP	Resource Management Plan
COA	Condition of Approval	S	Stipulation
CWCS	Comprehensive Wildlife Conservation Strategy	SHPO	State Historic Preservation Office
DR	Decision Record	SITLA	State Institutional Trust Lands Administration
EA	Environmental Assessment	SLFO	Salt Lake Field Office
EAR	Environmental Analysis Record	SUPO	Surface Use Plan of Operations
EIS	Environmental Impact Statement	TCP	Traditional Cultural Property
ENBB	Environmental Notification Bulletin Board	UDAQ	Utah Division of Air Quality
EOI	Expression of Interest	UDWR	Utah Division of Wildlife Resources
EPA	Environmental Protection Agency	USFS	United States Forest Service
ESA	Endangered Species Act	USFWS	United States Fish & Wildlife Service
FLPMA	Federal Land Policy and Management Act	USC	United States Code
FONSI	Finding of No Significant Impact	UTSO	Utah State Office
GHMA	General Habitat Management Area	WO	Washington Office
GIS	Geographic Information Systems		
IDPR	Interdisciplinary Parcel Review		
IM	Instruction Memorandum	FFO	Fillmore Field Office
LN	Lease Notice	SLFO	Salt Lake Field Office
MS	Mineral Survey	WDD	West Desert District
MBTA	Migratory Bird Treaty Act		
MMRP	Military Munitions Response Program		
MOU	Memorandum of Understanding		
NCLS	Notice of Competitive Lease Sale		
NEPA	National Environmental Policy Act		
NHPA	National Historic Preservation Act		
NHT	National Historic Trail		

### ***6.3 LIST OF APPENDICES***

**Appendix A –Proposed Action with Stipulations for Lease**

**Appendix B – Recommended Parcel Deferrals**

**Appendix C – Stipulation and Notice Exhibits**

**Appendix D – Maps**

**Appendix E – Yuba Recreation Area Viewshed**

**Appendix F – Interdisciplinary Team Checklist**

**Appendix G   Response to Comments**

## **Appendix A –Proposed Action with Stipulations for Lease**

The two standard stipulations from the H-3120, Endangered Species Act and Cultural Resources as described in Section 2.3 will be applied to all parcels.

### **UT0918 – 020**

T. 15 S., R. 1 W., SLM

- Sec. 17: NENE, NENW, SWNW;
- Sec. 18: Lots 1-4, W2NE, E2NW, E2SW, SWSE;
- Sec. 19: Lots 1, 4, W2NE, E2NW;
- Sec. 30: Lots 1-4, E2NW, E2SW, W2SE;
- Sec. 31: Lots 1-5, E2NW, NESW.

1,521.74 Acres

Juab County, Utah

Fillmore Field Office

### **LEASE NOTICES**

UT-LN-37: Bald Eagle Habitat

UT-LN-38: Ferruginous Hawk Nest Sites

UT-LN-39: Golden Eagle Nest Sites

UT-LN-40: Golden Eagle Habitat

UT-LN-42: Burrowing Owl Habitat

UT-LN-44: Raptors

UT-LN-45: Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-52: Noxious Weeds

UT-LN-55: Water and Watershed Protection

UT-LN-59: Erodible Soils and Steep Soils

UT-LN-60: Steep Slopes

UT-LN-68: Notification & Consultation Regarding Cultural Resources

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-147: Kit Fox Habitat

### **UT0918 – 021**

T. 15 S., R. 1 1/2 W., SLM

- Sec. 23: Lots 1-4, N2NE, SWNE, NWSE;
- Sec. 24: Lots 1-3, W2NE, NW, NESW, NWSE;
- Sec. 25: All excluding ROW U0145588;
- Sec. 35: Lots 1-4, NE, W2SE.

1,709.412 Acres

Juab County, Utah

Fillmore Field Office

LEASE NOTICES

UT-LN-37: Bald Eagle Habitat  
UT-LN-38: Ferruginous Hawk Nest Sites  
UT-LN-39: Golden Eagle Nest Sites  
UT-LN-40: Golden Eagle Habitat  
UT-LN-42: Burrowing Owl Habitat  
UT-LN-44: Raptors  
UT-LN-45: Migratory Birds  
UT-LN-49: Utah Sensitive Species  
UT-LN-52: Noxious Weeds  
UT-LN-55: Water and Watershed Protection  
UT-LN-59: Erodible Soils and Steep Soils  
UT-LN-60: Steep Slopes  
UT-LN-68: Notification & Consultation Regarding Cultural Resources  
UT-LN-99: Regional Ozone Formation Controls  
UT-LN-102: Air Quality Analysis  
UT-LN-147: Kit Fox Habitat

**UT0918 – 022**

T. 16 S., R. 2 W., SLM

Sec. 1: Lot 3, SENW, SW;  
Sec. 11: N2NE, SWNE, E2NW;  
Sec. 12: NE, SESW, N2SE;  
Sec. 13: SENE, NENW.

800.15 Acres

Juab County, Utah

Fillmore Field Office

LEASE NOTICES

UT-LN-37: Bald Eagle Habitat  
UT-LN-38: Ferruginous Hawk Nest Sites  
UT-LN-39: Golden Eagle Nest Sites  
UT-LN-40: Golden Eagle Habitat  
UT-LN-42: Burrowing Owl Habitat  
UT-LN-44: Raptors  
UT-LN-45: Migratory Birds  
UT-LN-49: Utah Sensitive Species  
UT-LN-52: Noxious Weeds  
UT-LN-55: Water and Watershed Protection  
UT-LN-59: Erodible Soils and Steep Soils  
UT-LN-60: Steep Slopes  
UT-LN-68: Notification & Consultation Regarding Cultural Resources  
UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis  
UT-LN-147: Kit Fox Habitat

**UT0918 – 023**

T. 16 S., R. 2 W., SLM  
Sec. 3: W2SW;  
Sec. 4: Lot 1, SENE, SE;  
Sec. 9: E2;  
Sec. 10: W2NW, W2SW, SESW;  
Sec. 15: NW, W2SW.

1,080.83 Acres  
Juab County, Utah  
Fillmore Field Office

**LEASE NOTICES**

UT-LN-37: Bald Eagle Habitat  
UT-LN-38: Ferruginous Hawk Nest Sites  
UT-LN-39: Golden Eagle Nest Sites  
UT-LN-40: Golden Eagle Habitat  
UT-LN-42: Burrowing Owl Habitat  
UT-LN-44: Raptors  
UT-LN-45: Migratory Birds  
UT-LN-49: Utah Sensitive Species  
UT-LN-52: Noxious Weeds  
UT-LN-55: Water and Watershed Protection  
UT-LN-59: Erodible Soils and Steep Soils  
UT-LN-60: Steep Slopes  
UT-LN-68: Notification & Consultation Regarding Cultural Resources  
UT-LN-99: Regional Ozone Formation Controls  
UT-LN-102: Air Quality Analysis  
UT-LN-147: Kit Fox Habitat

**UT0918 – 024**

T. 16 S., R. 2 W., SLM  
Sec. 13: W2SW;  
Sec. 14: SENE, E2SW, SE;  
Sec. 23: E2, E2NW, E2SW;  
Sec. 24: W2NW, N2SW, SWSW, NWSE;  
Sec. 25: SWNW, W2SW;  
Sec. 26: NE, NENW, S2NW, N2SW, E2SE;  
Sec. 35: E2NE, NESE.

1,760.00 Acres

Juab County, Utah  
Fillmore Field Office

**STIPULATIONS**

UT-S-138: No Surface Occupancy – Sevier River and DMAD Reservoir  
UT-S-150: No Surface Occupancy- Sevier River Riparian Area

**LEASE NOTICES**

UT-LN-37: Bald Eagle Habitat  
UT-LN-38: Ferruginous Hawk Nest Sites  
UT-LN-39: Golden Eagle Nest Sites  
UT-LN-40: Golden Eagle Habitat  
UT-LN-42: Burrowing Owl Habitat  
UT-LN-44: Raptors  
UT-LN-45: Migratory Birds  
UT-LN-49: Utah Sensitive Species  
UT-LN-52: Noxious Weeds  
UT-LN-55: Water and Watershed Protection  
UT-LN-59: Erodible Soils and Steep Soils  
UT-LN-60: Steep Slopes  
UT-LN-68: Notification & Consultation Regarding Cultural Resources  
UT-LN-93: Reservoirs and Perennial Streams  
UT-LN-99: Regional Ozone Formation Controls  
UT-LN-102: Air Quality Analysis  
UT-LN-147: Kit Fox Habitat

**UT0918 – 025**

T. 16 S., R. 2 W., SLM  
    Sec. 21: NE, E2NW, NESW;  
    Sec. 22: NWSW, SWSE.  
360.00 Acres  
Juab County, Utah  
Fillmore Field Office

**LEASE NOTICES**

UT-LN-37: Bald Eagle Habitat  
UT-LN-38: Ferruginous Hawk Nest Sites  
UT-LN-39: Golden Eagle Nest Sites  
UT-LN-40: Golden Eagle Habitat  
UT-LN-42: Burrowing Owl Habitat  
UT-LN-44: Raptors  
UT-LN-45: Migratory Birds  
UT-LN-49: Utah Sensitive Species  
UT-LN-52: Noxious Weeds

UT-LN-59: Erodible Soils and Steep Soils  
UT-LN-68: Notification & Consultation Regarding Cultural Resources  
UT-LN-99: Regional Ozone Formation Controls  
UT-LN-102: Air Quality Analysis  
UT-LN-147: Kit Fox Habitat

**UT0918 – 026**

T. 16 S., R. 2 W., SLM

Sec. 27: S2NW, N2SW, SWSW;

Sec. 28: S2NE, SENW, S2;

Sec. 33: NE, E2NW, NESW, SWSW, N2SE, SESE;

Sec. 34: W2NE, W2, NWSE;

Sec. 35: SWNW, NWSW.

1,600.00 Acres

Juab County, Utah

Fillmore Field Office

**LEASE NOTICES**

UT-LN-37: Bald Eagle Habitat

UT-LN-38: Ferruginous Hawk Nest Sites

UT-LN-39: Golden Eagle Nest Sites

UT-LN-40: Golden Eagle Habitat

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UT-LN-49: Utah Sensitive Species

UT-LN-52: Noxious Weeds

UT-LN-59: Erodible Soils and Steep Soils

UT-LN-68: Notification & Consultation Regarding Cultural Resources

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-147: Kit Fox Habitat

## **Appendix B – Recommended Parcel Deferrals**

### **UT0918 – 019**

T. 13 S., R. 1 W., SLM

Sec. 15: W2NENW, W2NW, S2NW, SW.

300.00 Acres

Juab County, Utah

Fillmore Field Office

The majority of parcel UT0918-019 falls within Nephi City landfill. Parcel 019 is being deferred and not analyzed for the September 2018 Oil and Gas Lease (Appendix B).

## **Appendix C – Stipulation and Notice Exhibits**

NUMBER	UTAH STIPULATIONS
<b>H-3120-1 Competitive Leases (P) Illustration 20 (Cultural Resource Protection)</b>	<p align="center"><b>CULTURAL RESOURCE PROTECTION STIPULATION</b></p> <p>This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.</p>
<b>H-3120-1 Competitive Leases (P) Illustration 20 (Threatened and Endangered Species Act)</b>	<p align="center"><b>THREATENED AND ENDANGERED SPECIES ACT STIPULATION</b></p> <p>The lease area may now or hereafter contain plants, animals or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that would contribute to a need to list such species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. 1531 et seq. including completion of any required procedure for conference or consultation.</p>
<b>UT-S-138</b>	<p align="center"><b>NO SURFACE OCCUPANCY – SEVIER RIVER AND DMAD RESERVOIR</b></p> <p>In order to protect the Sevier River and DMAD Reservoir no occupancy or other subsurface disturbance within 100 feet of the river or 1000 feet of the reservoir high water line will be allowed.</p> <p><b>Exception:</b> None  <b>Modification:</b> None  <b>Waiver:</b> None</p>
<b>UT-S-150</b>	<p align="center"><b>NO SURFACE OCCUPANCY – SEVIER RIVER RIPARIAN AREA</b></p> <p>All of the land in the designated area is included in the Sevier River Riparian Area. Therefore, no occupancy or disturbance of the surface of the land described in this area is authorized. The lease holder however, may exploit the oil and gas resources in the area by directional drilling from sites outside this area.</p> <p><b>Exceptions:</b> None  <b>Modification:</b> None  <b>Waiver:</b> None</p>

NUMBER	UTAH LEASE NOTICES
<b>UT-LN-37</b>	<p style="text-align: center;"><b>BALD EAGLE HABITAT</b></p> <p>The lessee/operator is given notice that lands in this lease have been identified as containing Bald Eagle Habitat. Modifications to the Surface Use Plan of Operations may be required in order to protect the Bald Eagle and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.</p>
<b>UT-LN-38</b>	<p style="text-align: center;"><b>FERRUGINOUS HAWK NEST SITES</b></p> <p>The lessee/operator is given notice that this lease has been identified as containing ferruginous hawk nest sites. No surface use or otherwise disruptive activity allowed from March 1 through August 1 which would disrupt ferruginous hawk breeding activities within 0.5 mile of an occupied nest. No surface use or otherwise disruptive activity would be allowed which would result in an aboveground facility within 0.5 mile of known ferruginous hawk nests, which have been active within the past 3 years. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>
<b>UT-LN-39</b>	<p style="text-align: center;"><b>GOLDEN EAGLE NEST SITES</b></p> <p>The lessee/operator is given notice that this lease has been identified as containing golden eagle nest sites. No surface use or otherwise disruptive activity allowed from January 1 through August 31 which would disrupt golden eagle breeding activities within 0.5 mile of an occupied nest. No surface use or otherwise disruptive activity would be allowed which would result in an aboveground facility within 0.5 mile of known golden eagle nests, which have been active within the past 3 years. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>
<b>UT-LN-40</b>	<p style="text-align: center;"><b>GOLDEN EAGLE HABITAT</b></p> <p>The lessee/operator is given notice that lands in this lease have been identified as containing Golden Eagle Habitat. Modifications to the Surface Use Plan of Operations may be required in order to protect the Golden Eagle and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.</p>
<b>UT-LN-42</b>	<p style="text-align: center;"><b>BURROWING OWL HABITAT</b></p> <p>The lessee/operator is given notice that this lease has been identified as containing burrowing owl habitat. No surface use or otherwise disruptive activity allowed from March 1 through August 31 which would disrupt burrowing owl breeding activities within 0.25 mile of an occupied nest. No surface use or otherwise disruptive activity would be allowed which would result in an aboveground facility within 0.25 mile of known burrowing owl nests, which have been active within the past 3 years. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>

NUMBER	UTAH LEASE NOTICES
<b>UT-LN-44</b>	<p style="text-align: center;"><b>RAPTORS</b></p> <p>Appropriate seasonal and spatial buffers shall be placed on all known raptor nests in accordance with Utah Field Office Guidelines for Raptor Protection from Human and Land use Disturbances (USFWS 2002) and Best Management Practices for Raptors and their Associated Habitats in Utah (BLM 2006). All construction related activities will not occur within these buffers if pre-construction monitoring indicates the nests are active, unless a site-specific evaluation for active nests is completed prior to construction and if a BLM wildlife biologist, in consultation with USFWS and UDWR, recommends that activities may be permitted within the buffer. The BLM will coordinate with the USFWS and UDWR and have a recommendation within 3-5 days of notification. Any construction activities authorized within a protective (spatial and seasonal) buffer for raptors will require an on-site monitor. Any indication that activities are adversely affecting the raptor and/or its' young the on-site monitor will suspend activities and contact the BLM Authorized Officer immediately. Construction may occur within the buffers of inactive nests. Construction activities may commence once monitoring of the active nest site determines that fledglings have left the nest and are no longer dependent on the nest site. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>
<b>UT-LN-45</b>	<p style="text-align: center;"><b>MIGRATORY BIRD</b></p> <p>The lessee/operator is given notice that surveys for nesting migratory birds may be required during migratory bird breeding season whenever surface disturbances and/or occupancy is proposed in association with fluid mineral exploration and development within priority habitats. Surveys should focus on identified priority bird species in Utah. Field surveys will be conducted as determined by the authorized officer of the Bureau of Land Management. Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations.</p>
<b>UT-LN-49</b>	<p style="text-align: center;"><b>UTAH SENSITIVE SPECIES</b></p> <p>The lessee/operator is given notice that no surface use or otherwise disruptive activity would be allowed that would result in direct disturbance to populations or individual special status plant and animal species, including those listed on the BLM sensitive species list and the Utah sensitive species list. The lessee/operator is also given notice that lands in this parcel have been identified as containing potential habitat for species on the Utah Sensitive Species List. Modifications to the Surface Use Plan of Operations may be required in order to protect these resources from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, Migratory Bird Treaty Act and 43 CFR 3101.1-2.</p>

NUMBER	UTAH LEASE NOTICES
<b>UT-LN-52</b>	<p style="text-align: center;"><b>NOXIOUS WEEDS</b></p> <p>The lessee/operator is given notice that lands in this lease have been identified as containing or is near areas containing noxious weeds. Best management practices to prevent or control noxious weeds may be required for operations on the lease.</p>
<b>UT-LN-55</b>	<p style="text-align: center;"><b>WATER AND WATERSHED PROTECTION</b></p> <p>The lessee/operator is given notice that this lease may need modifications to the Surface Use Plan of Operations in order to prevent water pollution and protect municipal and non-municipal watershed areas. No surface use or otherwise disruptive activity allowed within 500 feet of live water or the reservoirs located in the Beaver, Milford and Sevier River drainages, Parowan and Cedar Valley drainages, or Pinto Creek/Newcastle Reservoir drainage in order to prevent water quality degradation in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>
<b>UT-LN-59</b>	<p style="text-align: center;"><b>ERODIBLE SOILS AND STEEP SLOPES</b></p> <p>The lessee/operator is given notice that the area is a municipal or non-municipal watershed and has steep slopes and erosive soils. New roads will be constructed to avoid soils that are highly erosive and / or in critical or severe erosion conditions. New roads will be constructed with water bars. Riprap may be required. Road grades in excess of 8 percent will normally not be allowed. In special circumstances, where a road grade of more than 10 percent is allowed, its maximum length will be 1,000 feet. Access grading along with exploration, drilling, construction, or other activities will be prohibited during wet or muddy conditions (usually during spring runoff and summer monsoon rains).</p> <p>Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>
<b>UT-LN-60</b>	<p style="text-align: center;"><b>STEEP SLOPES</b></p> <p>The lessee/operator is given notice that this lease has been identified as containing steep slopes. No surface use or otherwise disruptive activity allowed on slopes in excess of 30 percent without written permission from the Authorized Officer. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.</p>

NUMBER	UTAH LEASE NOTICES
UT-LN-68	<p align="center"><b>NOTIFICATION &amp; CONSULTATION REGARDING CULTURAL RESOURCES</b></p> <p>The lease area may now or hereafter be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), the Archaeological Resources Protections Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), other statutes and Executive Order 13007, and which may be of concern to Native American tribes, interested parties, and the State Historic Preservation Officer (SHPO). BLM will not approve any ground disturbing activities as part of future lease operations until it completes applicable requirements of the National Historic Preservation Act (NHPA), including the completion of any required procedure for notification and consultation with appropriate tribe(s) and/or the SHPO. BLM may require modifications to exploration and development proposals to further its conservation and management objectives on BLM-approved activities that are determine to affect or impact historic or cultural properties and/or resources.</p>
UT-LN-93	<p align="center"><b>RESERVOIRS AND PERENNIAL STREAMS</b></p> <p>To protect reservoirs and perennial streams from unnecessary pollution and sedimentation, 43 CFR 3101.1-2 (the 200 meter rule) will be applied to prevent surface disturbance within 100 yards of the high water line of permanent water bodies.</p>
UT-LN-99	<p align="center"><b>REGIONAL OZONE FORMATION CONTROLS</b></p> <p>To mitigate any potential impact oil and gas development emissions may have on regional ozone formation, the following Best Management Practices (BMPs) would be required for any development projects:</p> <ul style="list-style-type: none"> <li>• Tier II or better drilling rig engines</li> <li>• Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines &lt;300HP and 1g NOx/bhp-hr for engines &gt;300HP</li> <li>• Low bleed or no bleed pneumatic pump valves</li> <li>• Dehydrator VOC emission controls to +95% efficiency</li> <li>• </li> </ul> <p>Tank VOC emission controls to +95% efficiency</p>
UT-LN-102	<p align="center"><b>AIR QUALITY ANALYSIS</b></p> <p>The lessee/operator is given notice that prior to project-specific approval, additional air quality analyses may be required to comply with the National Environmental Policy Act, Federal Land Policy Management Act, and/or other applicable laws and regulations. Analyses may include dispersion modeling and/or photochemical modeling for deposition and visibility impacts analysis, control equipment determinations, and/or emission inventory development. These analyses may result in the imposition of additional project-specific air quality control measures.</p>

NUMBER	UTAH LEASE NOTICES
<b>UT-LN-147</b>	<p data-bbox="786 268 1078 300"><b>KIT FOX HABITAT</b></p> <p data-bbox="415 310 1349 380">The lessee/operator is given notice that no surface disturbances would be allowed within 660 feet (200 meters) of an occupied natal kit fox den</p>

## **Appendix D – Maps**

This map is intended for display purposes only. No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data, or for purposes not intended by the BLM. This map may not meet National Map Accuracy Standards. This product was developed through digital means and information may be updated without notification.

Map Created 11/22/2017

**September 2018 Issues**

- Interstate
- US Highway
- Municipal Boundary
- U-29-95-37-14-019
- U-29-95-37-14-020
- U-29-95-37-14-021
- U-29-95-37-14-022
- U-29-95-37-14-023
- U-29-95-37-14-024
- U-29-95-37-30-025
- U-29-95-37-14-026

**Land with Wilderness Characteristics**

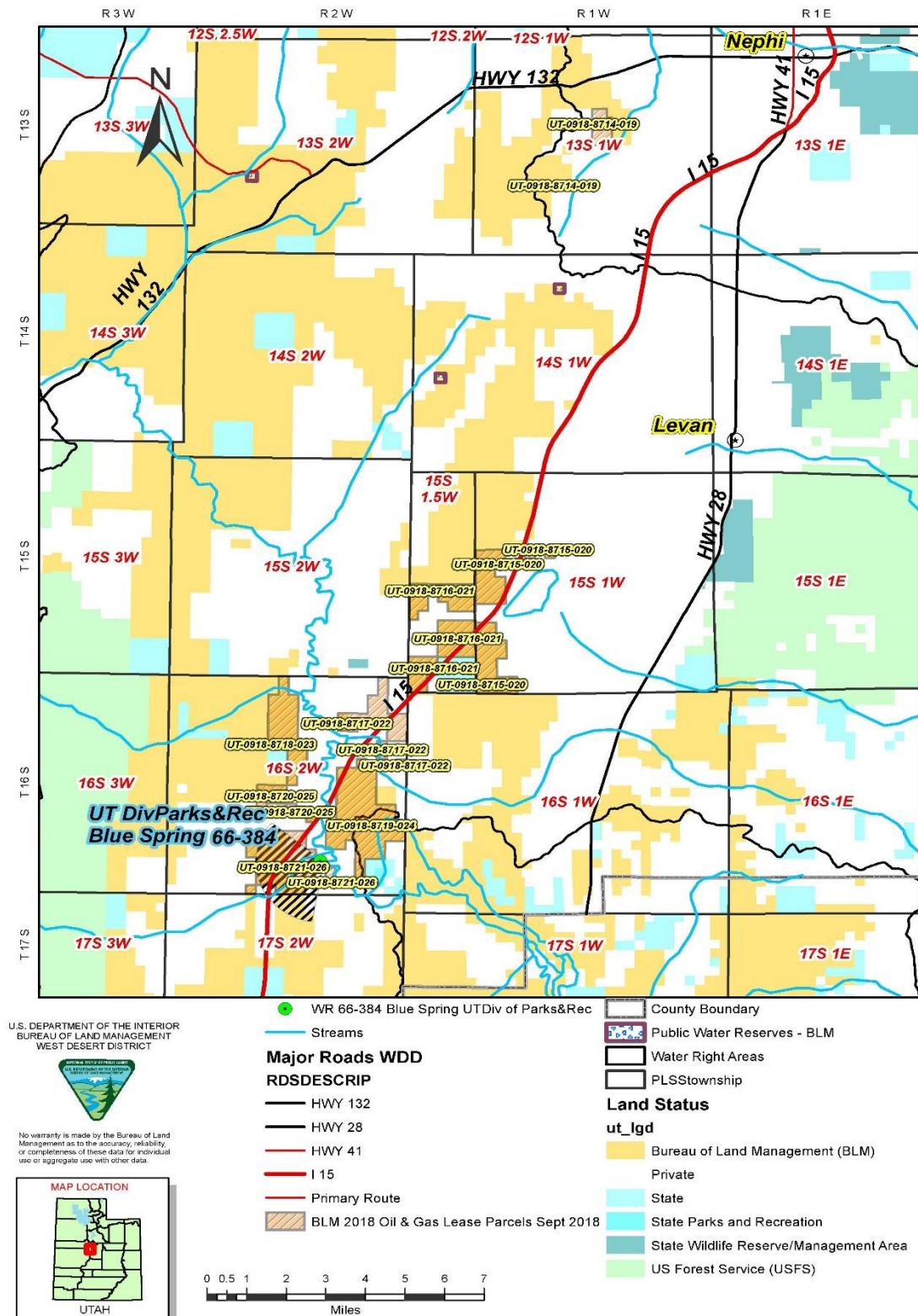
- No Wilderness Characteristics
- Wilderness Characteristics
- Natural Areas

**Land Status**

- Recreational Land and Management (BLM)
- Barren/Low-Land
- Barren/Low-Land (Urban Land)
- Recreation (BLM)
- Multiple Recreation and Corps of Engineers
- Private
- State
- State Parks and Recreation
- State Wildlife Recreation/Management Area
- US Fish & Wildlife (USFWS)/National Wildlife Refuge
- US Forest Service (USFS)
- USFS Wilderness Area

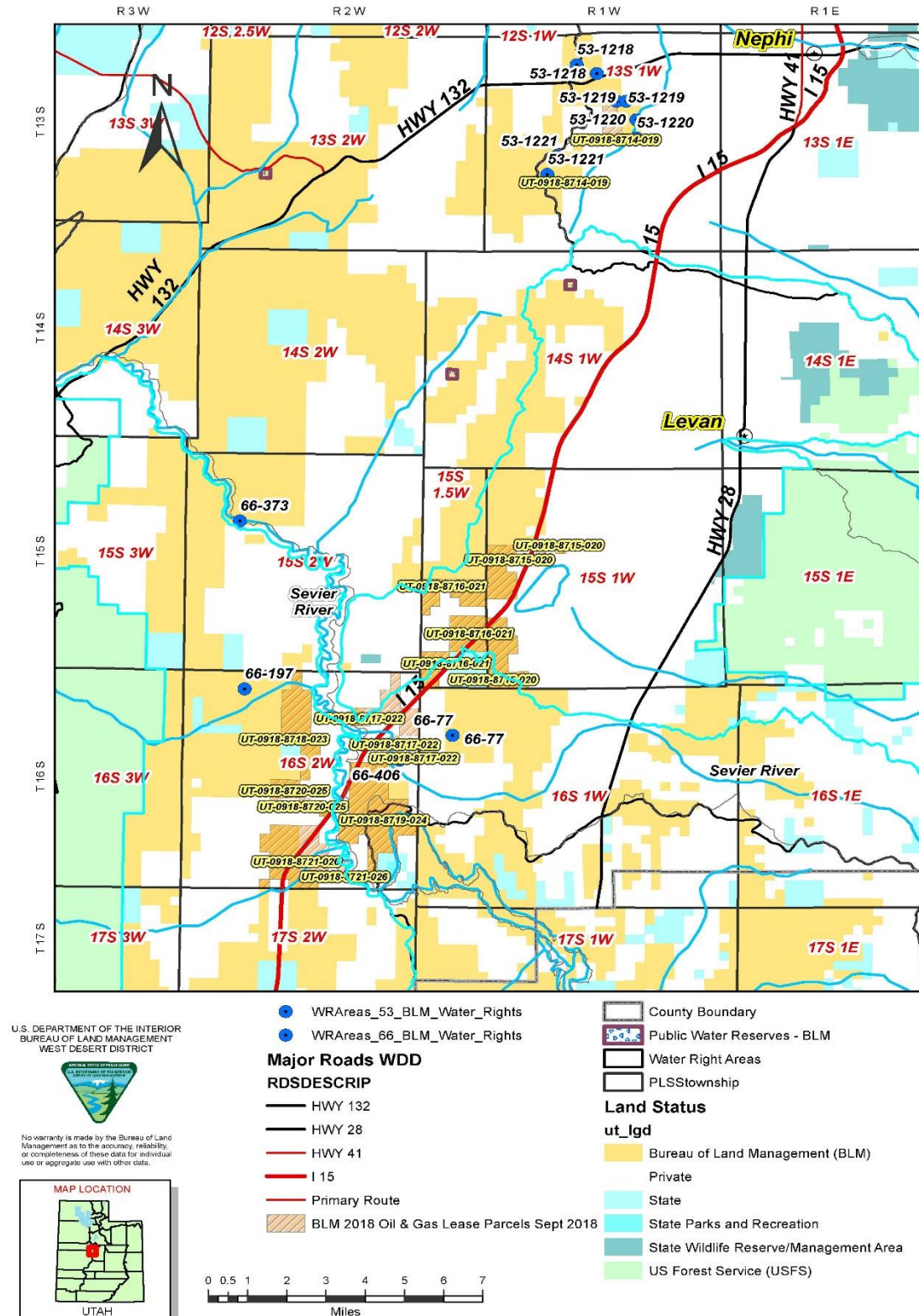
# BLM Sept 2018 Oil and Gas Lease Sale

January 29, 2018



# BLM Sept 2018 Oil and Gas Lease Sale Water Resources

January 26, 2018

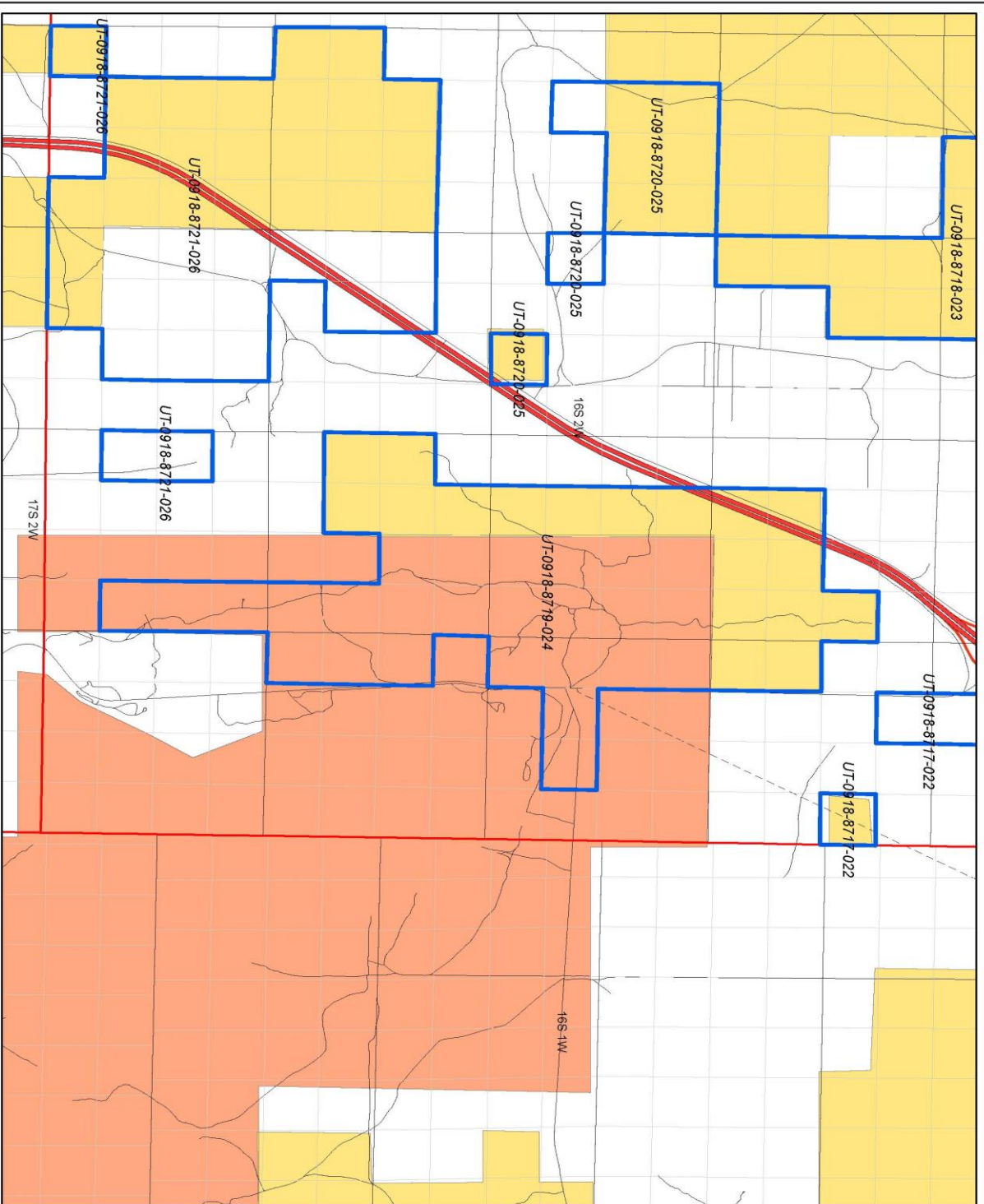




Fillmore Field Office

September 2018 Oil and Gas  
Lease Sale Parcels

UT-0918-8719-024



Map Created 01/16/2018

Map uses a UTM Zone 12 North  
(NAD83) Projection

This map is intended for general informational use. No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for use in any specific application. The map may not meet National Map Accuracy Standards. This product was developed without modification.

# Yuba Lake Viewshed



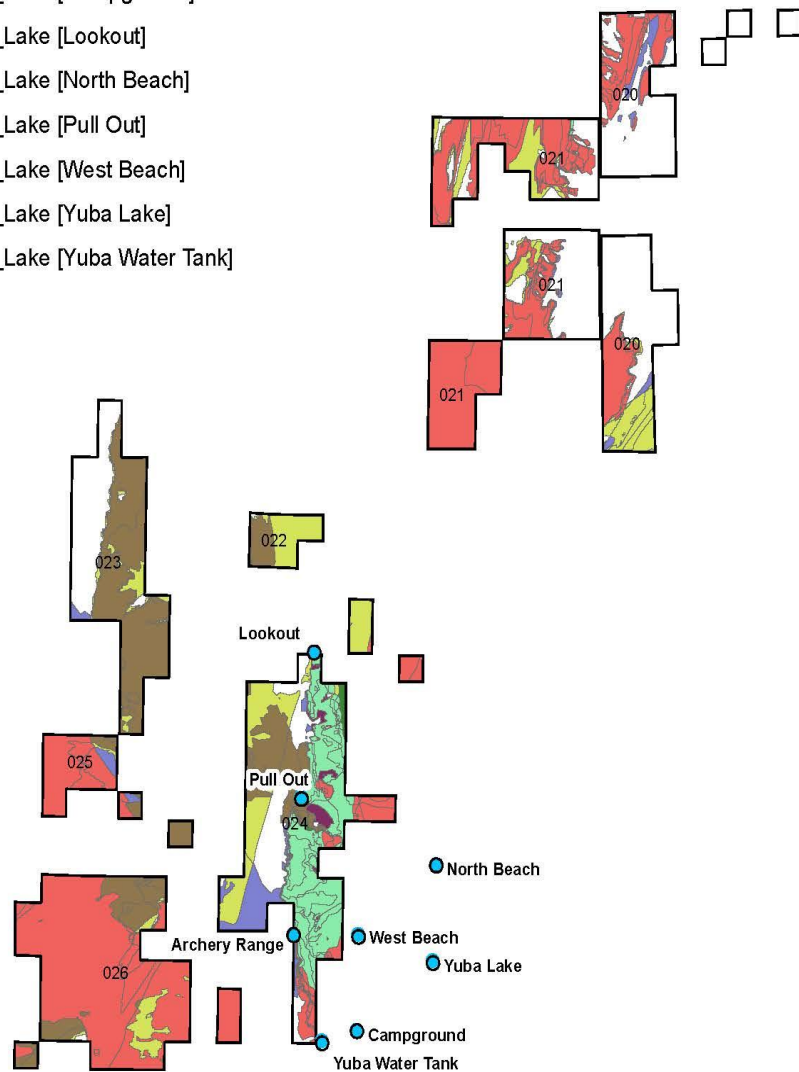
● KOPs

□ Parcels

## Viewshed

### DESCRPTIO

- Fillmore\_FO\_Yuba\_Lake [Additional Campground]
- Fillmore\_FO\_Yuba\_Lake [Archery Range]
- Fillmore\_FO\_Yuba\_Lake [Campground]
- Fillmore\_FO\_Yuba\_Lake [Lookout]
- Fillmore\_FO\_Yuba\_Lake [North Beach]
- Fillmore\_FO\_Yuba\_Lake [Pull Out]
- Fillmore\_FO\_Yuba\_Lake [West Beach]
- Fillmore\_FO\_Yuba\_Lake [Yuba Lake]
- Fillmore\_FO\_Yuba\_Lake [Yuba Water Tank]

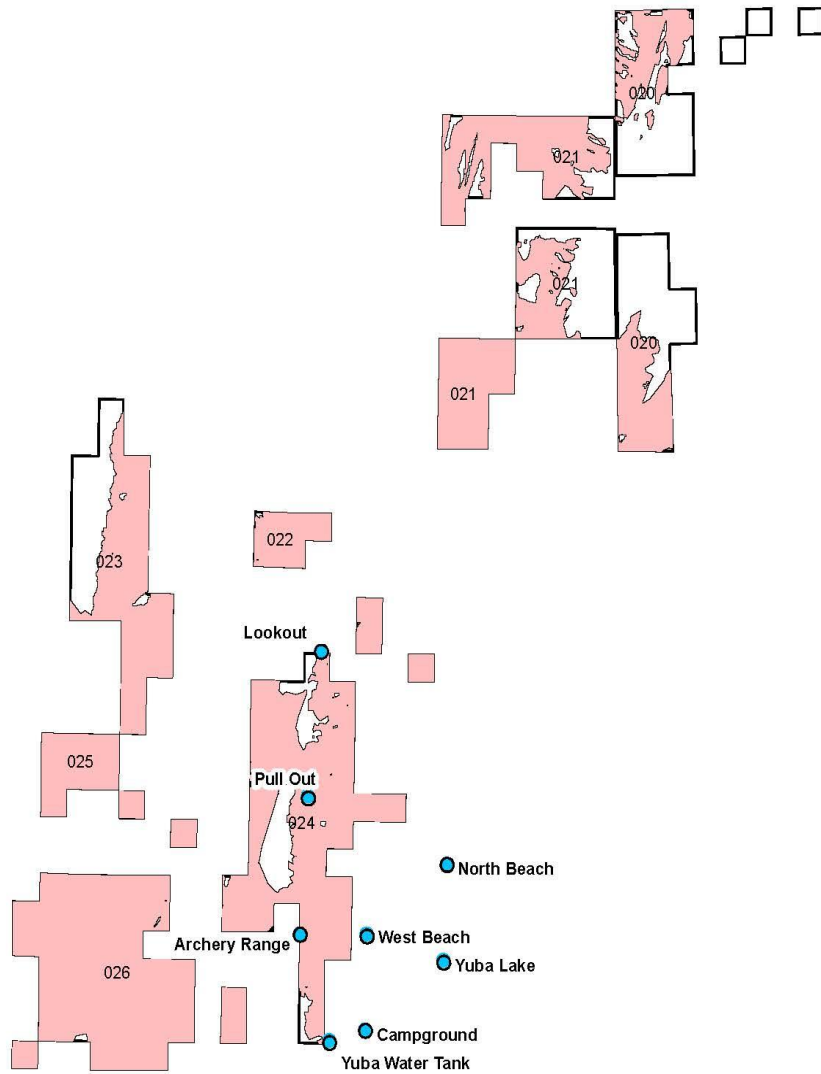


Additional Campground ●

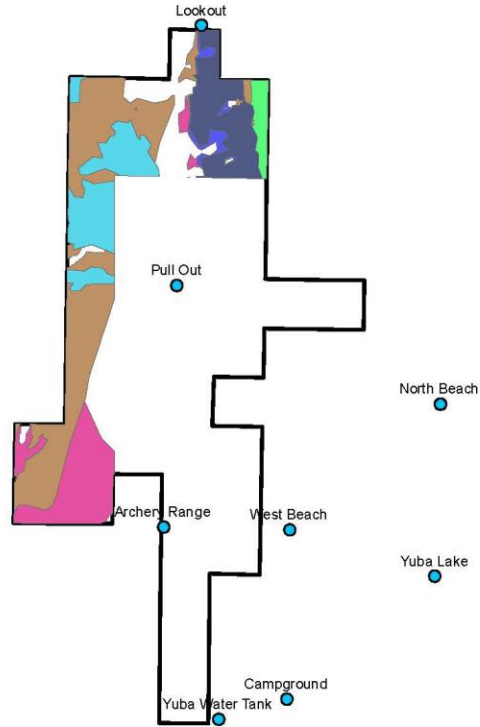
# Yuba Lake Total Viewshed



- KOPs
- FID\_Yuba\_L**
- Viewshed
- Parcels



Additional Campground ●



## Parcel 024 with NSO

RID	Shape *	DESCRIPTION	acres
0	Polygon	Fillmore_FO_Yuba_Lake [Archery Range]	180.656025
1	Polygon	Fillmore_FO_Yuba_Lake [Lookout]	411.155942
2	Polygon	Fillmore_FO_Yuba_Lake [North Beach]	91.119892
3	Polygon	Fillmore_FO_Yuba_Lake [Pull Out]	106.344335
4	Polygon	Fillmore_FO_Yuba_Lake [West Beach]	35.828727
5	Polygon	Fillmore_FO_Yuba_Lake [Yuba Lake]	96.26045

Additional Campground



## **Appendix E – Yuba Recreation Area Viewshed**

Fillmore FO Yuba Lake Viewshed			
<b>KOP</b>	<b>Parcel number</b>	<b>Acres</b>	<b>Total Acres Visible from KOP</b>
Lookout	20	284	5025
	21	1052	
	22	780	
	23	708	
	24	506	
	25	240	
	26	1455	
Campground	24	54	54
Additional Camp Ground	24	397	397
North Beach	24	731	731
Pull Out	22	69	2600
	23	651	
	24	450	
	25	272	
	26	1158	
Archery	20	357	3614
	21	243	
	22	14	
	23	541	
	24	600	
	25	359	
	26	1500	
West Beach	20	228	1171
	21	567	
	22	143	
	24	233	
Yuba Lake	20	0.25	787.25
	21	34	
	24	753	
Yuba Water Tank	20	372	3382
	21	1017	
	22	280	
	24	168	
	25	257	
	26	1288	

<b>Grand Total (acres)</b>	<b>KOPs</b>		
397.48	[Additional Campground]		
3614.57	[Archery Range]		
54.49	[Campground]		
5025.70	[Lookout]		
731.00	[North Beach]		
2600.05	[Pull Out]		
1471.18	[West Beach]		
787.25	[Yuba Lake]		
3382.00	[Yuba Water Tank]		
<b>18063.72</b>			
<b>6,760.10</b>	<b>total cumulative (overlap taken into account)</b>		
<b>Parcel #</b>	<b>Parcel Acres</b>	<b>Acres visible from KOPs</b>	<b>% of parcel impacted</b>
020	1541.22	571.05	37.02
021	1721.77	1202.6	69.84
022	806.87	782.16	96.93
023	1083.34	728	67.2
024	1765.93	1511.58	85.6
025	363.88	363.88	100
026	1601.49	1600.88	99.96

## Appendix F – Interdisciplinary Team Checklist

### INTERDISCIPLINARY TEAM CHECKLIST

**Project Title:** August 2018 Oil and Gas Lease Sale

**NEPA Log Number:** DOI-BLM-UT-W020-2018-0009-EA

**File/Serial Number:**

**Project Leader:** Cheryl LaRoque

**DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)**

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

Determi- nation	Resource	Rationale for Determination	Signature	Date
<b>RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)</b>				
PI	Air Quality	Air Quality in the region is good, but impacts were brought forward in the analysis due to general concern typically recieved from the public. cause Lease Notices UT-LN-96 and UT-LN-101 should be attached to all parcels.	/s/ R.B. Probert	2/8/18
NP	Areas of Critical Environmental Concern	There are no ACEC's located within the project area.	/s/ Teresa Frampton	12/20/17
NI	Cultural Resources	Based on the assessment of expected site density and location, anticipated size of development, and topographic complexity of the proposed lease parcels, BLM determines that reasonable development of six acres of disturbance associated with a single well pad could occur within the parcels with no adverse effect to historic properties. Effects to historic properties form a single well pad can be avoided through the judicious placement of that well within the lease areas. Similarly, the topographic complexity of the parcels will allow for the avoidance of indirect and/or cumulative effects through the judicious placement of disturbances. Any development must take into account the eligible sites within the parcels; through judicious placement of planned development, these locations can be avoided and development will have no adverse effect to the sites (see BLM-Utah's Lease Notice 68 – <i>Notifications and Consultation Regarding Cultural Resources</i> {UT-LN-68}, which will be included for all parcels). The BLM makes a determination of No Adverse Effect to Historic Properties consistent with 36CRF800.5(b) for the FFO September 2018 Oil and Gas Lease Sale.	/s/R. Yandell	3/28/18
PI	Greenhouse Gas Emissions	It is unlikely project-specific impacts would be able to be determined from likely amounts of GHGs from lease development. A qualitative description of climate change impacts should be included in the EA.	R.B. Probert	2/8/18
NI	Environmental Justice	As defined in EO 12898, minority, low income populations and disadvantaged groups may be present within the counties involved in this lease sale. However, all citizens can file an expression of interest or	/s/ R.B. Probert	1/3/18

Determination	Resource	Rationale for Determination	Signature	Date
		participate in the bidding process (43 CFR §3120.3-2). The stipulations and notices applied to the subject parcels do not place an undue burden on these groups. Leasing the nominated parcels would not cause any disproportionately high and adverse effects on minority or low income populations.		
NI	Farmlands (Prime or Unique)	There are some areas that may qualify as prime or unique farmlands if irrigated within the parcels.. Any activity that involves surface disturbance would have to be authorized at the APD stage. At that stage, impacts to soils, prime and unique farmlands and other resources would need to be assessed and mitigated to prevent unnecessary degradation. No parcels are currently being irrigated or are proposed to be irrigated.	/s/ Brian Taylor	01/08/18
NP	Floodplains	No mapped floodplains are on site. The Sevier River which is a controlled river has wide historic floodplain areas located near some of the southern lease blocks (UT-0918-022, UT-0918-023, UT-0918-024, UT-0918-025, UT-0918-026 and project disturbance should generally be avoided in flat adjacent historic floodplain areas. Sevier River floodplain stipulation UT-LN-54 and Water and Watershed Protection Lease Notice UT-LN-55 would be added to these parcels and should mitigate any floodplain concerns.	/s/ Tom Gibbons	1/26/18
NI	Fire/Fuels Management	The implementation of appropriate reclamation standards at the APD stage would prevent an increase of hazardous fuels. Fuels and fire management would not be impacted by the lease process.	/s/ Trevor Memmott	1/29/18
NI	Geology / Mineral Resources/Energy Production	The proposed action would not affect any mineral resources within the proposed areas. There are no geothermal leases, locatable minerals cases, or mineral materials sites which overlap the boundaries of the proposed leases. Depending on the success of oil and gas well drilling, non-renewable natural gas and/or oil would be extracted and delivered to market. Production of oil and/or gas would result in the irretrievable loss of these resources. A RFD was prepared. Environmental impacts of the RFD were analyzed and are documented in the EA. The proposed action would not exceed the level of activity predicted in the RFD. While conflicts could arise between oil and gas operations and other mineral operations, these could generally be mitigated under the regulations 3101.1-2, where proposed oil and gas operations may be moved up to 200 meters or delayed by 60 days and also under the standard lease terms (Sec. 6) where sitting and design of facilities may be modified to protect other resources.	/s/ Todd Leeds	12/19/17
NI	Invasive Species/Noxious Weeds (EO 13112)	Issuing a lease has no impact on noxious and invasive weeds.	/s/R.B. Probert	1/29/18
NI	Lands/Access	The governing land use plan (as amended) allows for oil and gas development with the associated infrastructure. Oil and gas leasing is not expected to affect access to public lands. Leasing would be subject to all valid pre-existing rights.  Any proposals for future projects within the oil and gas lease area would be reviewed on a site-specific basis and other right-of-way (ROW) holders in the area would also be notified, as per	/s/ Frederick G. Braun	1/29/18

Determination	Resource	Rationale for Determination	Signature	Date
		<p>regulations, when an application for a ROW is received by this office.</p> <p>Off-lease ancillary facilities that cross public land, if any, may require separate authorizations. Coordination with the existing ROW holders and application of SOPs, BMPs and design features at the APD stage, would ensure protection of existing rights.</p> <p>The House Range Resource Management Plan, Master Title Plats for the lease area, and a Geo Report have all been reviewed and it has been determined that there are no withdrawals, right-of-way avoidance, or right-of-way exclusions within the oil and gas lease area.</p>		
NI	Livestock Grazing	<p>Leasing parcels would not impact livestock grazing. However, there is an inherent expectation to conduct operations on each leased parcel. Any activity that involves surface disturbance or direct resource impacts would have to be authorized as a lease operation through future NEPA analysis, on a case-by-case basis, at the APD stage. Impacts to livestock grazing may occur as a result of subsequent actions including exploration development, production, etc. Therefore, reclamation provisions/procedures including re-vegetation (utilizing appropriate seed mix based on the ecological site, elevation and topography), road reclamation, range improvement project replacement/restoration (e.g., fences, troughs and cattle guards), noxious weed control, would be identified in future NEPA/decision documents on a case-by-case basis (at the APD stage). In addition, if any range improvement projects could be impacted by wells or associated infrastructure, well pads could be moved 200 meters to avoid rangeland improvements 43 CFR 3101.1-2.</p>	/s/ Brian Taylor	1/8/18
PI	Migratory Birds	<p>All of the parcels are habitat utilized by migratory birds at various times throughout the year.</p> <p>Future oil and gas exploration and development may effect migratory birds or their seasonal habitats through exploration, development, or production activities. When a lessee files an APD, outlining in detail the scope of the proposed action those impacts would be fully analyzed in additional environmental documents through the NEPA process. Conditions of Approval (COAs) would also be placed on the APD to reduce impacts to migratory birds to the extent feasible when necessary.</p> <p>Applicable Lease Notices that would apply to all parcels would include: UT-LN-37 (Bald Eagle Habitat), UT-LN-38 (Ferruginous Hawk Nest Sites), UT-LN-39 (Golden Eagle Nest Sites), UT-LN-40 (Golden Eagle Habitat), UT-LN-42 (Burrowing Owl Habitat), UT-LN-44 (Raptors), UT-LN-45 (Migratory Birds), UT-LN-49 (Utah Sensitive Species), and UT-S-263 (Crucial Raptor Nesting Area).</p>	/s/Mace Crane	
NP	National Historic Trails	<p>A cultural resource file search conducted on 02/20/2018 indicates that there are no National Historic Trails within the project area.</p>	/s/Robyn Yandell	11/22/16

Determination	Resource	Rationale for Determination	Signature	Date
NI	Native American Religious Concerns	BLM initiated consultation via certified letter on 2/28/2018 to the following tribes: Hopi Tribe, Skull Valley Goshute Tribe, Kanosh Band of Paiutes, the Paiute Tribe of Utah, the Ute Indian Tribe, the Goshute Tribe, the Navajo Tribe, the Kaibab Band of Paiute Indians, and the Pueblo of Jemez.		
NI	Paleontology	There are no known paleontological resources within the parcel boundaries. If an APD is filed, specific clearances would be conducted and incorporated into that NEPA process. As a COA, if paleontological resources are located, the AO would be contacted	/s/ Todd Leeds	12/19/17
NI	Property Boundary Evaluation	Property boundary markers are present throughout the lease parcels; however, there should not be any impacts to any of the property boundary monuments.	/s/Kyle Monroe	12/14/17
NI	Rangeland Health Standards	Leasing parcels would not impact Rangeland Health Standards nor would it affect wetlands /riparian areas, water quality, desirable species or soil productivity. However, there is an inherent expectation to conduct operations on each leased parcel. Any activity that involves surface disturbance or resource impacts would have to be authorized at the APD stage. At that stage impacts to soils, vegetation, water quality and wetlands/riparian areas would need to be assessed and potential mitigation measures used to maintain rangeland health in accordance with the standards. It would be expected that reclamation procedures identified in the livestock grazing section would be required to ensure impacts to Rangeland Health Standards are minimized. The Gold Book standards also provide mechanisms to achieve Rangeland Health. These include weed control, siting considerations (e.g. well pad, contouring, road alignment), and re-vegetation. It is anticipated that standard operating procedures, Best management practices, and operator design features would be implemented to mitigate possible impacts to those resources for which the rangeland health standards were written. If this is so then it is concluded that rangeland health standards would be met.	/s/ Brian Taylor	01/08/18
NI	Recreation	The eastern portions of parcel UT0918 – 024 is located within Yuba Recreation Area (Appendix D). Only the western 1/3 of this parcel is outside of NSO. A VRM analysis was completed which indicates only a small percentage of the non-NSO portion of parcel 024 can be observed from Yuba Lake Recreation Area (Appendix E). Through this analysis it was determined that potential future production wells on the non-NSO portions of parcel 24 would be visually obscured from the recreating public at Yuba Recreation Area. Due to this recreation resources were considered but will not be addressed further in this NEPA document.	/s/ Teresa Frampton	
PI	Sensitive Animal Species	There are no Threatened, Endangered, or Candidate (T&E) species known to occur on any of the parcels. There has been no critical habitat delineated for any T&E species on any of the parcels. T&E species are not present on any of the parcels and will not be discussed further.  Sensitive raptor and migratory bird species are discussed in the Migratory Bird Section.	/s/Mace Crane	2/21/18

Determination	Resource	Rationale for Determination	Signature	Date
		The lease parcels contain breeding and foraging habitat for kit fox ( <i>Vulpes macrotis</i> ). Potential direct effects may include den abandonment or mortality. Potential indirect effects may include habitat loss or habitat fragmentation. Applicable Lease Notice that would apply to these parcels would include: Utah Sensitive Species lease notice UT-LN-49, UT-LN-55. Water and Watershed Protection implements a 500 foot NSO buffer along the Sevier River. This Notice is anticipated to fully mitigate any potential effects to special status fish species.		
NI	Socio-Economics	No quantifiable additional or decreased economic impact to the local area (Juab County) would be caused by the proposed action.	/s/ R.B. Probert	1/29/18
NI	Soils	Leasing activity would not affect soils. However, there is some expectation that exploration and development could occur, at which time additional NEPA would be conducted should an APD be filed. If additional site specific resource protection measures are needed to prevent unnecessary or undue degradation, these would be developed at the time of the site specific NEPA UT-LN-59 and UT-LN-60 apply to UT0918-020, UT0918-021 UT0918-022 UT0918-023 UT0918-024 and UT-LN-059 applies to UT0918-025 and UT0918-26.	/s/ Paul Caso	1/29/18
NI	Threatened, Endangered, Candidate or Special Status Plant Species	There are no known federally-listed or other special status rare plant species within the seven proposed 2018 lease sale parcels of the Fillmore Field Office. Therefore, this project would be “no effect” to Threatened, Endangered, or Candidate plant species. However, there is one BLM Sensitive Plant Species, Sevier townsendia ( <i>Townsendia jonesii</i> var. <i>lutea</i> ), that does occur on Arapien shales just of few miles south of the proposed lease sale parcels 24 and 26. Potential habitat may occur within those two parcels. Prior to any ground-disturbing activities associated with future lease development on parcels 24 and 26, an on-the-ground soil survey of those parcels would need to be completed to identify any Arapien shales that may be present. Should Arapien shales be found to be present, then a detailed plant survey would need to be completed within the flowering window of Sevier townsendia (May-June) following survey protocols outlined by the FFO T&E Plants Specialist. Any Sevier townsendia populations found in the plant surveys may require the relocation of proposed project facilities under the standard mandatory lease stipulations to protect special status species.	/s/ DWhitaker	1/29/18
NP	Threatened, Endangered, or Candidate Animal Species	There are no Federally listed threatened, endangered, or candidate wildlife species or critical habitat known to occur within or reasonably near the proposed oil and gas lease parcels. Therefore, this project would be “no effect” to Threatened, Endangered, or Candidate animal species.	/s/Mace Crane	2/21/18

Determination	Resource	Rationale for Determination	Signature	Date
NP	Wastes (hazardous or solid)	Leasing will not generate Solid or hazardous wastes. Drilling and/or production has the potential to generate wastes. This would be addressed through the drilling permitting process.	/s/ Todd Leeds	12/19/17
NI	Water Resources/Quality (drinking/surface/groun d)	<p>There are no BLM drinking water source protection zone in the lease areas. BLM's painted rocks well (SE4 Section 5, T17S, R1W SLBM) is located sufficiently upstream and upslope of lease areas such that it is not of concern for protection (WR-66-406 change application A28166).</p> <p>There is one non-BLM surface water source that does have a surface water drinking protection source zone for it that intersects parcel UT-0918-026. The water source is Blue Spring which has a water right (# 66-384/Exchange 1165) Utah Division of Parks and Recreation and is a drinking water source for Yuba State Park. Oil and gas lease activities have a potential to impact this drinking water source. As such, UT-LN-56 Statewide (Drinking Water Source Protection Zone) and UT-LN-58 Statewide (Drinking Water Source Protection Zone) should be applied to help mitigate or avoid possible impacts.</p> <p>The Sevier River (from the Yuba Reservoir downstream to DMAD) has approved TMDLs to reduce and control pollution from sediment and total phosphorous.</p> <p>Chicken Creek (even though the lower portions typically are dry and apparently in irrigation canals) is water quality 303(d) list impaired for water temperature and total dissolved solids from Levan to the confluence of the Sevier River.</p> <p>Further, lease UT-0918-024 is located on the western shoreline of the Yuba Lake shoreline and is managed as NSO.</p> <p>The BLM is signatory to the State of Utah's Nonpoint Water Memorandum of Understanding (MOW) to implement non-point water quality source controls to comply with the Clean Water Act and the Utah Water Quality Act. The BLM re-affirmed Non-point Source Pollution MOU participation for another five years on 2/13/17.</p> <p>To protect water quality, the project should adopt a few best management practices (BMPs). The project needs to promote the control of dust, discharges, and ensuring construction and ongoing operations do not concentrate runoff from precipitation and cause soil erosion. Discharges of drilling fluids and water to intermittent streams and near BLM water wells and springs with water rights need design features/mitigation. And any discharge pond should be constructed away from BLM water rights to protect groundwater quality.</p> <p>Lease stipulations that would be included are: UT-S-138 (No Surface Occupancy = Sevier River and DMAD Reservoir), UT-S-150 (No Surface Occupancy – Sevier River Riparian Area), UT-S-318 (Drainage). Additionally, the following lease notices would be included: UT-LN-55 (Water and Watershed Protection) that is modified (to protect Sevier River, Chicken Creek, or tributary drainages that flow into the Sevier River and Chicken Creek), UT-LN-59 (Erodible Soils and Steep Slopes and UT-LN-60 (Steep Slopes), and UT-LN-93 (Reservoirs and</p>	/s/ Tom Gibbons	1/26/18

Determination	Resource	Rationale for Determination	Signature	Date
		Perennial Streams) to help protect nearby impaired surface water body water quality.		
NI	Water Rights	<p>All proposed lease boundaries are at least 3.5 miles or greater distance from BLM Federal Reserve Water rights and thus are not anticipated to be impacted by this project.</p> <p>Several BLM State of Utah Appropriative water rights are located near proposed lease parcels worth mentioning.</p> <p>Parcel UT-0918-019 is within a few hundred feet to a 1.5 miles from four separate BLM water rights (WR 53-1218, 53-1219, 53-1220, and 53-1221 all listed as point to point ephemeral water rights that support livestock uses that we know little about as they are water use claims that appear to lack FFO water right files (from a quick check). WR 53-1221 is a sole supply water right that supplies up to 34.4 AF/yr for livestock.</p> <p>UT-0918-022, UT-0918-023, UT-0918-024, UT-0918-025, UT-0918-026 are located near or upstream of three other sole supply water rights for livestock uses. These are two BLM well water rights (WR 69-197 [Dust Bowl Well] and WR 66-77 [Washboard Well]) and a surface water right directly on the Sevier River (WR 66-373). The two wells are only a little more than 1 mile from lease boundaries while the surface water right is located about 7 to 10 miles downstream of lease boundaries is on a significant perennial flowing river that has existing water quality impairments. The Sevier River is a controlled, modified river (multiple dams/reservoirs).</p> <p>In general, project activities would not affect, alter, or disturb the access and use of these water rights. BMPs found in the Onshore Orders are suitable to ensure ground water impairment of water rights does not occur..</p>	/s/ Tom Gibbons	1/26/18
NI	Wetlands/Riparian Zones	The leasing action in its self would not impact Riparian/Wetlands. Riparian/wetland areas exist on parcels 20 and 24 that have been identified for lease. If Future oil and gas exploration occurs, no surface occupancy or surface disturbance would be allowed within 100 feet of the riparian areas. Stipulations UT-S-138, UT-S-150, UT-LN-54 and UT-LN-55 may apply.	/s/ Brian Taylor	01/08/18
NP	Wilderness/WSA	There are no WSAs within the project area.	/s/ Teresa Frampton	12/20/17
PI	Wildlife and Fish Excluding Designated/Special Status Species	Oil and gas exploration and development could affect wildlife resources in a variety of direct and indirect ways. Environmental effects of the alternatives are likely to be similar to other surface and habitat disturbing activities that affect general wildlife species and may include morality, habitat loss or fragmentation; disturbance and displacement of individuals or populations. The majority of the lands in the analysis area would be available for leasing with standard lease terms. General protection for wildlife species is provided in accordance with 43 CFR 3162.5-1(a) and Section 6 of the standard lease form (Form 3100-11), which states that the "Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air and water, and to cultural,	/s/ Mace Crane	2/21/18

Determination	Resource	Rationale for Determination	Signature	Date
		<p>biological, visual, and other resources, and other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section.” Under this alternative, specific restrictions which may be deemed reasonable and applied for the protection of wildlife would be identified once an APD outlining the detailed proposal has been submitted by the operator.</p> <p>. Geospatial information from the Utah Division of Wildlife Resources was reviewed to determine if the lease parcels contained crucial habitat for a variety of wildlife species. None of the parcels contain crucial habitat for wildlife species; crucial big game winter range was not identified on any of the lease parcels. The lease parcels contain nesting, foraging, and winter habitat for a variety of migratory birds. The effected environment and effects analysis on general migratory bird species are described under the migratory bird section of this assessment.</p> <p>Potential direct and indirect effects associated with the proposed action which may include mortality, displacement, and habitat loss, alteration, or fragmentation have been fully mitigated through the proper application of lease stipulations and lease notices. All of the potential direct and indirect effects are expected to be fully mitigated, therefore, the proposed action is not expected to add incrementally to the cumulative effects environment. There are no cumulative effects on wildlife anticipated from the implementation of the proposed action</p> <p>There are no potential cumulative effects associated with the no action alternative. Not leasing the parcels would not add incrementally to the effected environment.</p>		
NI	Woodland / Forestry	There would be no expected impacts to the woodland and forestry resources with the proposed project	/s/ Eric Reid	1/29/18
NI	Vegetation Excluding Designated/Special Status Species	<p>It is expected that reclamation procedures would be required to ensure long-term vegetation impacts are minimized. Reclamation provisions/procedures would include re-vegetation (utilizing appropriate seed mix based on the ecological site, elevation and topography), road reclamation, noxious weed controls, etc.</p> <p>At this stage (lease sale) there would be no impacts to vegetation resources. Impacts (both direct and indirect) would likely occur if a lease is developed in the future. Potential impacts would be analyzed and would be based on the details (specific site location and</p>	/s/ Brian Taylor	01/08/18

Determination	Resource	Rationale for Determination	Signature	Date
		supporting infrastructure) contained in an APD. SOPs, BMPs and site specific design features applied at the APD stage including reclamation, would be applied as COAs.		
NI	Visual Resources	<p>Public lands have a variety of visual (scenic) values that warrant different levels of management. The BLM uses the Visual Resource Management (VRM) system to identify and evaluate scenic values to determine the appropriate level of scenery management. These management classes regulate the amount of disturbance that is allowed to occur within a given area – Class I areas are managed to preserve the existing character of the landscape; Class II areas are managed to retain the existing character of the landscape, with a low level of landscape change; Class III areas are managed to partially retain the existing character of the landscape, with only moderate change to the landscape; and Class IV areas are managed to allow major modifications to the existing character of the landscape, and the level of change can be high. Mitigation measures would be in conformance with the VRM Class III objectives. Due to this, Visual Resources were considered but will not be addressed further in this NEPA document</p> <p>The proposed parcels are located in areas managed as VRM Class II, III and IV under the current land use plan.</p> <p>Leasing of this area could result in oil and gas exploration. All areas designated as VRM Class II are located in NSO therefore no impacts to Class II VRM.</p> <p>As seen from existing roads in the area, the short-term level of change to the characteristic landscape would be moderate to high; by employing best practices for oil &amp; gas mitigation, the long-term contrast would be low to moderate, which is consistent with management objectives for the area.</p> <p>Leasing these parcels could impact visual resources and scenic quality for these units, but would be analyzed at the APD phase. The eastern portions of parcel UT0918 – 024 is located within Yuba Recreation Area (Appendix D). Only the western 1/3 of this parcel is outside of NSO. A VRM analysis was completed which indicates only a small percentage of the non-NSO portion of parcel 024 can be observed from Yuba Lake Recreation Area (Appendix E). Through this analysis it was determined that potential future production wells on the non-NSO portions of parcel 24 would be visually obscured from the recreating public at Yuba Recreation Area.</p>	/s/ Teresa Frampton	12/20/17
NP	Wild Horses and Burros	There are no wild horse Herd Management Areas within the proposed project area.	/s/ Trent Staheli	1/8/2018
NI	Lands with wilderness characteristics	<p>The proposed parcel UT-0918-020 and UT-0918-021 overlap lands with wilderness characteristics inventory unit #193.</p> <p>In January 2015, a field inventory was conducted on Sub-Unit 193-C (Sub-Units A and B were previously inventoried in September 2014 and found to not contain wilderness characteristics). The results of the 2015 inventory determined that the unit did not contain wilderness characteristics.</p> <p>The proposed parcel UT-0918-023 overlaps lands with wilderness character inventory unit #202.</p>	/s/ Teresa Frampton	12/22/17

<b>Determination</b>	<b>Resource</b>	<b>Rationale for Determination</b>	<b>Signature</b>	<b>Date</b>
		In September 2104, a desktop inventory was conducted on Unit 202. The unit was divided into Sub-Units A and B, based on wilderness inventory roads. Neither unit met the size criteria; therefore, Unit 202 does not contain wilderness characteristics.		

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**FINAL REVIEW:**

<b>Reviewer Title</b>	<b>Signature</b>	<b>Date</b>	<b>Comments</b>
Environmental Coordinator			
Authorized Officer			

## Appendix G – Response to Comments

### WILDEARTH GUARDIANS

#	Commenter	Resource/Issue	Comment	Response
1	WEG	Leasing Violates NEPA/FLPMA	The BLM failed to comply with NEPA and FLPMA and cannot lease any of the parcels until it updates the underlying RMPs and FEIS. Because both of these plans [Pony Express RMP and House Range RMP] are severely out-of-date and do not account for new, intensified changes to the land, such as multi-stage hydraulic fracturing, the BLM cannot lease any of the proposed parcels until it updates these plans.	New circumstances do not automatically require the revision or amendment to a land use plan nor the preparation of an EIS, regardless of the age of the planning decisions. If warranted, an environmental assessment is prepared to analyze the impacts of new circumstances. If the analysis in the EA results in a Finding of No Significant Impact, the proposal can proceed. If not, then an EIS or Land Use Plan amendment may be appropriate.
2	WEG	Hydraulic Fracturing	<p>As the BLM is well aware, with the use of fracking comes a myriad of potentially significant environmental impacts. Fracking has not only opened up vast areas of minerals that were previously uneconomical to extract—thereby expanding the total land area impacted by development—the process of fracking also causes more intense impacts to our public health, air, water, land, and wildlife. Risks include adverse impacts on water, air, agriculture, public health and safety, property values, climate stability, and economic vitality, as well as earthquakes.</p> <p>Here, because the BLM approved both of the applicable RMPs/FEISs almost thirty years ago, both documents fail to analyze the impacts of multi-stage hydraulic fracturing. Indeed, both RMPs anticipate that little to no development will occur.</p> <p>From this, it is clear that fracking, presents a new, intensified change use on public lands with significant impacts that exceed those analyzed in the underlying RMPs/FEISs. As a result, the BLM must postpone approval of the leases unless and until it updates the relevant RMPs/FEISs for the lease parcels.</p> <p>Relatedly, the BLM fails to take a hard look at the impacts of fracking in both of its [EAs], despite admitting</p>	The BLM is aware there is a conception that “the use of fracking comes a myriad of potentially significant environmental impacts”. See response to Comment #'s 1 and 3. Also, see Appendix D (Geology/Mineral Resources/Energy Production) regarding hydraulic fracturing correlation with earthquakes in Utah.

#	Commenter	Resource/Issue	Comment	Response
			<p>that fracking [is currently being used in the FFO and] will likely occur in the SLFO.</p> <p>Because the underlying RMPs/FEISs for the leases do not analyze fracking, BLM is required to take a hard look at the impacts from fracking in its lease sale EAs and cannot postpone its analysis until it is too late.</p>	
3	WEG	An EIS must be prepared and a FONSI cannot be reached.	<p>As currently written, the BLM cannot rely on the September 2018 lease sale EA[s] and FONSI[s] to conclude that no significant environmental impacts will occur because [both] EA[s] fail to include an analysis of the highly controversial, uncertain impacts associated with fracking, including the risks to public health, and fail to discuss cumulative impacts from surrounding lease sales.</p> <p>A federal agency must prepare an EIS when a major federal action “significantly affects the quality of the human environment.” The significance of a proposed action is gauged based on both context and intensity.</p> <p>The first intensity factor under NEPA is “the degree to which the proposed action affects public health and safety.” There is no doubt the use of fracking impacts public health and safety. Unfortunately, because neither the underlying [RMPs/FEISs] nor the lease sale EA[s] analyze the actual impacts of fracking, e.g., air emissions, truck traffic, amount of water used, etc., there is no way BLM can address this factor or otherwise conclude that impacts will be insignificant.</p> <p>A similar argument applies to the second and third intensity factors, which require, respectively, a look at the degree to which impacts are highly controversial and the degree to which impacts are highly uncertain or involve unique and unknown risks.</p> <p>Here, the [FFO] seems to admit that industry has used fracking within the field office and that its use is recent, thereby leading to unknown impacts. [See FFO EA at 12.] Yet, the [FFO]</p>	<p>Despite offering two lengthy treatises on the effects tangentially related to fracking in Exhibits 1 and 2 of its comment letter, the commenter has offered no scientifically rigorous, peer-reviewed studies by objective researchers, that, with proper safeguards, the use of fracking impacts public health and safety. The Interdisciplinary checklist has been revised to discuss the lack of evidence that fracking results in harm to public safety. Safeguards are implemented at the APD stage, at which time BLM geologists and/or petroleum engineers can evaluate site specific factors such as depth of groundwater compared to the target depth of the well, which is where any fracking would occur. For most wells, the target depth is significantly deeper than the groundwater depth, and fracking cannot directly effect groundwater because there is no interface between the fracking zone and the aquifer. If the geologist/engineer finds that the aquifer and frack zone are in close enough permeate that fractures might permeate the aquifer, the operator would be required to modify the APD until it could be implemented without risk to groundwater.</p> <p>The indirect impacts from fracking, such as those listed in Comment 2, are essentially the same as those from oil and gas development in general. Adding hydraulic fracking as part of the development process does not change the potential impacts in any meaningful way.</p>

#	Commenter	Resource/Issue	Comment	Response
			<p>fails to further address these unknown impacts and instead defers any analysis to the APD stage. Id. As a result, BLM cannot conclude that the impacts from the proposed action will be insignificant.</p> <p>Turning to the final intensity factor — whether the action is related to other actions with individually insignificant but cumulatively significant impacts —the BLM also fails to fully analyze the impacts of the proposed actions in conjunction with surrounding, recent lease sales. Although the [FFO] does include some information on past leases in the EA, it is unclear whether these leases are the leases the from the September 2017 sale which are directly next to the September 2018 leases. The BLM must clarify this and present information regarding the September 2017 leases if these leases are not addressed.</p> <p>Finally, the draft FONSI[s] for [both EAs] fail to provide any additional information supporting the BLM’s finding of no significant impacts. Both FONSIs present identical, [7] one sentence conclusions. FFO, SLFO FONSI at 1 (“Based on the analysis of potential environmental impacts presented in the EA and consideration of the significance criteria in 40 CFR 1508.27, it has been determined that Alternative A (Proposed Action) would not result in significant impacts on the human environment.”). These conclusions are completely unsupported by any additional information or a point by point analysis of the significance factors. Consequently, the record provides no support for and the agency cannot conclude that the proposed actions will not significantly impact the environment.</p>	<p>Section 1.1 outlines BLM’s steps it would take if a FONSI cannot be reached.</p> <p>As outlined in Utah BLM’s NEPA Guidebook, “the CEQ Guidelines [40 CFR 1501.4 (e)] require that an agency make available a FONSI to the public for review in certain limited circumstances. Therefore an unsigned FONSI should be released with an EA when the EA is made available for public comment. The unsigned FONSI is typically a simple statement accompanying the EA. It allows the public to comment on the significance of the impacts analyzed in the EA.”</p> <p>A detailed FONSI (covering context and intensity) would be prepared and released with the revised EA at the protest period associated with the NCLS.</p>
4	WEG	Defer analysis to the APD stage.	The BLM also fails to conduct a thorough, site-specific analysis at the lease sale stage as required by existing case law. For example, in both EAs, the BLM states that additional, site specific analysis will be deferred until	The leasing EA is a site specific analysis of the potential indirect impacts from leasing. When evaluating the potential for impacts from development of parcels proposed for leasing, BLM resource specialists consider a variety of factors. They first look at the

#	Commenter	Resource/Issue	Comment	Response
			<p>the Application Permit to Drill (“APD”) stage.</p> <p>When a lease constitutes an irretrievable commitment of resources and impacts at the lease sale stage are reasonably foreseeable, an agency is required to analyze the site-specific impacts of a lease before its issuance. See <i>New Mexico ex. rel. Richardson v. U.S. Bureau of Land Mgmt.</i>, 565 F.3d 683, 717–18 (10th Cir. 2009); see also <i>Blue Mountains Biodiversity Proj. v. Blackwood</i>, 161 F.3d 1208, 1215 (9th Cir. 1998) (“Nothing in the tiering regulations suggests that the existence of a programmatic EIS for a forest plan obviates the need for any future project-specific EIS, without regard to the nature of magnitude of a project.”). “NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment.” <i>U.S. Bureau of Land Mgmt. v. Kern</i>, 284 F.3d 1062, 1072 (9th Cir. 2002); see also 40 C.F.R. § 1500.1(b) (“NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.”). This is especially the case if postponing the analysis results in a piecemeal look at the impacts. See 40 C.F.R. § 1508.27 (“Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.”). The Tenth Circuit has explicitly held, within the context of oil and gas leasing, that the BLM must prepare a site-specific EIS at the lease sale stage when two factors are met: 1) there is an irretrievable commitment of resources and 2) impacts are reasonably foreseeable. <i>New Mexico ex. rel. Richardson</i>, 565 F.3d at 717–18. An irretrievable commitment of resources occurs unless the BLM imposes a no surface occupancy (“NSO”) stipulation for the entire parcel. <i>Id.</i> at 718. Additionally, if a lease occurs in an area that had seen “considerable exploration” and “a</p>	<p>location of the parcels to determine what resources may be impacted from oil and gas development. They also consider the scoping input from stakeholders and agencies of expertise. The resource specialists then look at the Resource Management Plan (RMP) to determine which leasing stipulations would be applied to the parcels that could mitigate those potential impacts. They also look at the Reasonably Foreseeable Development Scenario (RFDS) to assess the scope of the potential impacts. The RFDS is a projection of the number of wells that might be drilled on a parcel, how much surface disturbance would occur from drilling those wells, and the likelihood that the wells would produce hydrocarbons. They also refer to the development scenario in Chapter 2 of the EA to determine what kinds of impacts could occur to other resources. Upon a holistic consideration of all these factors, the Resource Specialists then determine if additional analysis should be conducted to address remaining unresolved conflicts that were not addressed in the Environmental Impact Statement (EIS) prepared for the RMP, or other EISs or programmatic EA’s to which the leasing EA is tiered. If not, the rationale for not conducting additional analysis is documented in the Interdisciplinary (ID) Checklist. If more analysis is deemed necessary, it is documented in the leasing EA. Depending on the outcome of the analysis, a parcel or parcels may be deferred, may have Lease Notices attached to it (them) to inform lessees that mitigation may be required at the development stage, or simply conclude that the parcels can be offered without further action. Until such time as it is appropriate to conduct robust analysis, the BLM relies on the stipulations and notices listed in the analysis and Appendix C. At leasing, the details of an APD</p>

#	Commenter	Resource/Issue	Comment	Response
			<p>natural gas supply is known to exist beneath the[] parcels,” the impacts from leasing are reasonable foreseeable. Id. at 718–19.</p> <p>Here, there is no proposal by the BLM to impose NSO stipulations for the entirety of any of the lease sale parcels. See generally FFO EA, App’x A; SLFO EA, App’x A. Additionally, a [map] of the parcels as compared to exploratory and developed wells demonstrates that all of the parcels are in areas that have been thoroughly explored. As a result, impacts from the leases are reasonably foreseeable, and the BLM is required to conduct site-specific analyses of the impacts of leasing now, as opposed to at the APD stage. See New Mexico ex. rel. Richardson, 565 F.3d at 717–18.</p>	<p>is not known by any party, including a successful bidder. Other than leasing and the application of stipulations and notices, other details are not known that are ripe for decision making.</p> <p>NEPA allows for a phased approach. BLM has not relinquished its decision making authority at the leasing stage but it continues through APD/development and reclamation stages.</p>
5	WEG	Reasonable Range of Alternatives	<p>In [both the FFO EA and] the SLFO EA, the BLM’s alternatives analysis presents two options: lease nothing or lease everything. [See FFO EA at 16; SLFO EA 8. Indeed, the FFO admits that “[n]o other alternatives to the Proposed Act were identified that would meet the purpose and need of the Proposed Action.” FFO EA at 16. NEPA requires agencies to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14 (emphasis added). Indeed, at the end of March, a federal district court held that “BLM’s failure to consider any alternative that would decrease the amount of extractable coal available for leasing rendered inadequate the Buffalo EIS and Miles City EIS in violation of NEPA.” Western Org. of Resource Councils v. U.S. Bureau of Land Mgmt., CV 16-21-GF-BMM, 2018 WL 1456624, at *9 (D. Mont. March 23, 2018).] The BLM must consider an alternative that significantly reduces the proposed acreage for leasing based on other resource</p>	<p>Section 6.6.2 of the NEPA Handbook states: “The NEPA directs the BLM to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources;...” (NEPA Sec102(2)(E)). ... The range of alternatives explores alternative means of meeting the purpose and need for the action. ... You must analyze those alternatives necessary to permit a reasoned choice (40 CFR 1502.14). For some proposals there may exist a very large or even an infinite number of possible reasonable alternatives. When there are potentially a very large number of alternatives, you must analyze only a reasonable number to cover the full spectrum of alternatives. ...”</p> <p>As stated in Section 2.5 (Alternatives Considered): No other alternatives to the Proposed Action were identified that would meet the purpose and need of agency action. The Interior Board of Land Appeals has held that subsumed in a no action alternative is consideration of not leasing any or all parcels. See Biodiversity Conservation Alliance et al., 183</p>

#	Commenter	Resource/Issue	Comment	Response
			<p>considerations or considerations such as climate change.</p> <p>Finally, while Guardians objects to the BLM's proposal to lease given the low development potential of most of the lease parcels, FFO EA at 11, SLFO EA at 8, we at least request the agency give detailed consideration to alternatives that address the likelihood that industry is only seeking the proposed leases in order to stockpile reserves and not actually produce oil and gas. We request the BLM give detailed consideration to the following alternative action:</p> <p>"An alternative that defers offering the proposed lease parcels for sale until at least 50% of all leased federal oil and gas acres in Utah are put into production. This could happen as a result of leases expiring before being put into production, by industry relinquishing leases that have not produced for many years, or by leases being put into production by companies. This alternative would help to incentivize industry to start producing and generating revenue or to give up their ownership of federal oil and gas leases. This alternative would be a reasonable measure for the BLM to impose as a means for protecting the public interest and maximizing revenue for the American public where leases have already been issued."</p> <p>The Mineral Leasing Act makes clear that the BLM, through the Secretary of Interior, has a duty to ensure the best return for the Federal taxpayer. See 30 U.S.C. § 226. Furthermore, NEPA mandates that the BLM conduct site-specific, project-level analyses and that the agency considers a reasonable range of alternatives. 40 C.F.R. § 1502.14. Simply because the outdated Pony Express RMP and House Range Resource Area Management Plans designate certain lands as available for lease, does not mean that the BLM has to lease these lands without further thought or consideration of conditions and alternatives when a site-specific</p>	<p>IBLA 97, 124 (2013). The No Action alternative allows the authorized officer to resolve resource conflicts by deferring or removing before offering those parcels for sale.</p> <p>The BLM determined that the proposed action (lease all parcels) and no action (lease no parcels) satisfied an appropriate range of alternatives. The BLM has the ability to select part of each considered alternative in the Decision Record (lease all, portions, or none of the nominated parcels). Therefore, no additional alternatives were identified that would improve the range of alternatives or make it easier for BLM to respond to identified unresolved conflicts.</p> <p>The alternative suggested by WEG to defer offering parcels for sale until at least 50% of all leased areas in Utah are put into production is outside the scope of the analysis The BLM is obligated to respond to valid expressions of interest in oil and gas leasing submitted by the public regardless of the number of undeveloped existing leases.</p> <p>In addition, WEG has offered no rationale that their "alternative would help to incentivize industry to start producing and generating revenue or to give up their ownership of federal oil and gas leases protecting the public interest and maximizing revenue for the American public where leases have already been issued." The Federal government receives yearly rental for leases whether they produce or not. WEG has offered no cost benefit analysis that the loss of the rentals would be compensated with increased royalties from production.</p>

#	Commenter	Resource/Issue	Comment	Response
			project is proposed. In sum, because the BLM's proposed lease parcels are speculative, risky proposals, under the requirements of the MLA, the BLM must consider an alternative that defers these parcels.	
6	WEG	Air and Greenhouse Gas Emissions (Direct, Indirect and Cumulative Impacts)	<p>The BLM's analyses in the EA[S] also completely omit a quantitative analysis of the reasonably foreseeable air emissions and greenhouse gas emissions that would result from leasing the proposed parcels.</p> <p>For example, in the air emission section, the BLM notes that "[a]ccurate assessments of GHG emissions are not possible at the leasing stage since emissions are dependent on factors such as specific equipment used and duration of use, applicant-committed emission controls, and the expected production rate from the oil or gas well." [FFO EA at 30.[8]] But, the BLM's conclusion that site-specific air emissions are not possible to calculate at the lease sale stage is belied by the fact that the BLM has calculated such emissions before.</p> <p>In the Royal Gorge Field Office of Colorado, the BLM contracted with URS Group Inc. to prepare an analysis of air emissions from the development of seven oil and gas lease parcels. ...Either way, the BLM has the capability to analyze these emissions and must do so.</p>	<p>BLM discusses/addresses air quality and greenhouses gas emissions in the EA at multiple sections (3.3.1, 3.3.2, 4.3.1.1, 4.3.1.2, 4.3.2.1, 4.3.2.2, 4.4.2, 4.4.5 These include qualitative and quantitative discussions. An emissions inventory estimate is included in Table 4.</p> <p>The FFO provided an estimated GHG emission for the parcels analyzed in the EA that was prepared in much the same way as the URS analysis. The number of potential wells was projected from the RFD, and potential production was estimated from the closest development. The fact that the BLM discloses that such estimates cannot be portrayed as accurate is not an admission that it did not analyze emissions. The Royal Gorge Field Office analysis brought forth by the commenter as an example of an "accurate" assessment had a range of seven to 67 wells potentially drilled on the parcels, and did not attempt to do more than project the emissions from one well. Had it done so, the maximum estimated emissions would have been over 9 times the minimum. That could in no way be considered an accurate total.</p>
7			<p>The BLM also ignores the cumulative impacts from greenhouse gas emissions that will result from past and future lease sales in Utah and surrounding states. Although Guardians appreciates the fact that the [FFO acknowledges that "[f]uture foreseeable development could contribute to cumulative GHG emissions from existing fossil fuel combustion[.]" EA at 61. ("Since climate change and global warming are global phenomena, for purposes of this NEPA analysis, the analysis presented above about the direct and</p>	<p>Before preparing a cumulative impact analysis, a Cumulative Impact Analysis Area (CIAA) is identified. For Air Quality, the CIAA is typically the airshed(s) as defined by the EPA or it's State equivalent. For greenhouse gases, the CIAA would be global. The multistate approach suggested by the commenter would not result in a valid cumulative impact analysis for either air quality or greenhouse gases.</p>

#	Commenter	Resource/Issue	Comment	Response
			<p>indirect effects of GHG emissions from the Proposed Action is also an analysis of the cumulative effects of the Proposed Action.”)].</p> <p>And, the BLM’s air emissions analysis relies on reports from 2013 to conclude that the 2015 NAAQS standard for ozone will not be exceeded. The BLM’s lack of due diligence is particularly alarming because, as shown by the map below, there are a larger number of leases parcels from the March 2018 sales in Utah, Colorado, and New Mexico in the same geographic area. The scale of leasing in 2017 and 2018 supports the conclusion that the BLM must complete a full cumulative impacts analysis. For example, in 2017 and 2018, the BLM has leased or is planning to lease, the following: [Utah ..., Colorado ..., Nevada ..., New Mexico, Texas, &amp; Oklahoma ..., and Wyoming ...].</p> <p>All told, the BLM has leased or is proposing to lease approximately 1101 parcels or 1,271,451.17 acres of publically-owned land in the states listed above in 2017 and 2018.[9] All of these lease sales are occurring in Utah and in states surrounding Utah over similar time period. The BLM’s failure to discuss or acknowledge these lease sales is a clear violation of NEPA’s mandate to assess cumulative impacts, and the BLM’s EA[s] and draft FONSI[s] cannot stand as a result.</p>	
8	WEG	Costs of Reasonably Foreseeable Carbon Emissions	<p>In addition to an incomplete cumulative impacts analysis, the agency summarily dismisses a discussion on the social cost of carbon protocol, a valid, well-accepted, credible, and interagency-endorsed method of calculating the costs of greenhouse gas emissions and understanding the potential significance of such emissions while simultaneously touting the monetary benefits from the lease sale. See [FFO EA at 19;] SLFO EA at 39. Failure to use this best available science in the</p>	<p>Refer also to BLM’s response to Comment #7.</p> <p>The social cost of carbon protocol (SCC) was developed by a federal Interagency Working Group (IWG) to assist agencies in addressing Executive Order (EO) 12866, which required federal agencies to assess the cost and the benefits of intended regulations as part of their regulatory impact analyses. A recent Executive Order (EO) entitled “Promoting Energy Independence and Economic Growth,” issued March 28, 2017,</p>

#	Commenter	Resource/Issue	Comment	Response
			<p>EA violates NEPA's hard look mandate.</p> <p>The social cost of carbon protocol for assessing climate impacts is a method for "estimat[ing] the economic damages associated with a small increase in carbon dioxide (CO2) emissions, conventionally one metric ton, in a given year [and] represents the value of damages avoided for a small emission reduction (i.e. the benefit of a CO2 reduction)."</p> <p>In 2009, an Interagency Working Group was formed to develop the protocol and issued final estimates of carbon costs in 2010. These estimates were then revised in 2013 by the Interagency Working Group, which at the time consisted of 13 agencies. This report and the social cost of carbon estimates were again revised in 2015 ...in 2016.</p> <p>In sum, the social cost of carbon provides a useful, valid, and meaningful tool for assessing the climate consequences of the proposed leasing, and the BLM's complete failure to discuss it or otherwise explain its omission while touting the economic benefits of the lease sale is arbitrary and capricious.</p>	<p>directed that the IWG be disbanded and that technical documents issued by the IWG be withdrawn as no longer representative of federal policy. It further directed that when monetizing the value of changes in greenhouse gas emissions resulting from regulations, agencies follow the guidance contained in OMB Circular A-4 of September 17, 2003.</p> <p>The SCC is an estimate of the economic impacts associated with an increase in carbon dioxide emissions (typically expressed as the cost in dollars per metric tons of emissions) and generally produces a wide range of costs, with the greatest influence on costs caused by the discount rate. A lack of consensus on the appropriate discount rate often leads to large variations in SCC estimates.</p> <p>Although the SCC can be a helpful tool to assess the benefits of CO2 reductions, it does not reflect all damages or benefits due to current modeling and data limitations. Specifically, as discussed in the comprehensive technical review commissioned by the Electric Power Research Institute (EPRI) (Rose et al 2014), a number of fundamental technical issues have been identified with the social cost of carbon modeling approach and estimates. Several of these issues arise from the use of three separate underlying models – with differing frameworks, assumptions, and uncertainties. The EPRI technical review "reveals significant variation across models in their structure, behavior, and results and identifies fundamental issues and opportunities for improvements" (Rose et al.2014).</p> <p>It should also be noted that the social cost of carbon protocol does not measure the actual incremental impacts of a project on the environment and does not include all damages or benefits from carbon emissions. NEPA does not require a cost-benefit analysis (40 CFR Part</p>

#	Commenter	Resource/Issue	Comment	Response
				<p>1502.23) and one has not been conducted. Without a complete monetary cost-benefit analysis, which would include the social benefits of energy production to society as a whole and other potential positive effects, inclusion of a global social cost of carbon analysis would be unbalanced, potentially inaccurate, and not useful.</p> <p>Consequently, the increased economic activity, discussed in terms of revenue, employment, labor income, total value added, and output are simply the economic impacts associated with the Proposed Action. Economic impact is distinct from “economic benefit” as defined in economic theory and methodology, and the socioeconomic impact analysis required under NEPA is distinct from cost-benefit analysis.</p> <p>Detailed analysis is not required for the proposed action because 1) it is not engaged in a rulemaking for which the SCC protocol was originally developed; 2) the IWG, technical supporting documents, and associated guidance have been withdrawn; 3) NEPA does not require cost-benefit analysis and the agency did not undertake one here; and 4) because the full social impacts of oil and gas development have not been monetized, quantifying only the costs of GHG emissions would provide information that is both potentially inaccurate and not useful</p>
9	WEG	Leasing Violates the Mineral Leasing Act	Finally, the BLM’s proposed leasing runs afoul of the MLA in two key regards. First, it does not appear that most of the lease parcels contain lands that are known or believed to contain oil or gas deposits. See [FFO EA at 11,] SLFO EA at 8. Second, it does not appear that BLM has examined whether any lessee has the intent to diligently develop many of the proposed parcels. On the first matter, the Mineral Leasing Act allows	The parcels up for consideration in this EA were from public EOIs and not Bureau nominations; thus there is public interest in these parcels. The example given by WEG is for parcels that had been placed on the deferred lands list until after the new RMP was completed in 2015. BLM considered offering them, but because in the interim, interest in leasing the parcels had lessened it was appropriate to remove them

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			<p>leasing only where there are lands that are “known or believed to contain oil or gas deposits.” 30 U.S.C. § 226(a). Here, it unclear whether all of the lease parcels include lands that are known or believed to contain oil and gas deposits. At a minimum, the BLM has a duty to confirm where lands proposed for leasing are known or believed to contain oil and gas deposits.</p> <p>The BLM has recently confirmed that leasing in areas with low development potential and little to no industry interest warrants removing parcels from proposed sales. For example, the agency recently removed 20 parcels totaling 27,529 acres in Grand County, Colorado from a proposed lease sale, citing “low energy potential and reduced industry interest in the geographic area[.]” Exhibit 20, BLM, “BLM modifies parcel list for June 2017 oil and gas lease sale” (April 17, 2017). The BLM cannot blindly offer to lease public lands for oil and gas development without undertaking some steps to confirm that there exists reasonable development potential. On the second matter, the BLM cannot lease lands for oil and gas development if there is no intent to diligently develop. The agency confirmed this in a recent decision denying the issuance of an oil and gas lease to a lessee, explaining:</p> <p>“A fundamental requirement of every oil and gas lease, as stated in Section 4 on page 3 of Form 3100-1, is the requirement that the “Lessee must exercise reasonable diligence in developing and producing, and must prevent unnecessary damage to, loss of, or waste of leased resources.” This diligent development requirement has its basis in the Mineral Leasing Act of 1920, as amended. See 30 U.S.C. § 187. Thus, an expressed intent by a person offering to purchase a lease to not develop and produce the oil and gas resources on the leasehold would directly conflict with the diligent</p>	<p>from consideration. That is not the case with the parcels considered in the Fillmore EA. BLM has no reason to believe that the parcels were not nominated by entities prepared to diligently develop them.</p>

#	Commenter	Resource/Issue	Comment	Response
			development requirement and require that the offer be rejected.” [Exhibit 21,] BLM, Oil and Gas Noncompetitive Lease Offers Rejected (Oct. 18, 2016). This decision makes clear that the BLM is obligated to ensure that interest in these parcels is legitimate as it did in the case of Ms. Tempest-Williams. Id. The BLM must also apply equal treatment to all potential lessees. The agency owes it to the American people to ensure a fair return on public minerals.	
10	WEG	Correct Deficiencies or Defer All Parcels	In sum, because the BLM’s EA[s] and FONSI[s] for the September 2018 oil and gas lease sale do not comply with NEPA, FLPMA, or MLA, Guardians requests that BLM defer all of the proposed parcels, unless and until it corrects these deficiencies.	Refer to BLM’s responses to Comments #1-#9

#### Center for Biological Diversity and Western Watersheds Project

#	Commenter	Resource/Issue	Comment	Response
11	CBD/WWP	Greenhouse Gas Emissions and Climate Change	The Center for Biological Diversity’s analysis of federal oil and gas data shows that the land to be offered contains about 3.8 million barrels of oil and 22.6 billion cubic feet of natural gas. Application of EPA tools for estimating greenhouse gas emissions developing those fossil fuels would result in an estimated 3 million tons of equivalent carbon dioxide pollution – the same greenhouse gas pollution as driving a passenger car 7.4 billion miles—about 300,000 trips around the Earth. Potential emissions of such scale are a significant environmental impact mandating preparation of an Environmental Impact Statement (EIS)  Oil and gas operations are a major cause of climate change; this is due to emissions from the operations themselves, and emissions from the combustion of the oil and gas produced. Under NEPA’s requirement to	The CBD has not provided references to the data that it used to calculate the amount of oil and gas in the parcels offered, nor has it indicated how much to the total would apply to Fillmore Field Office parcels as opposed to Salt Lake Field Office parcels, which were analyzed in separate EAs. Even if the calculations could be substantiated, resources in the ground are not equivalent to those extracted and combusted. The numbers CBD provides do not obligate the BLM to prepare an EIS for the lease sale. The EA discloses the “downstream” emissions from potential production of the parcels and has its obligations under NEPA

#	Commenter	Resource/Issue	Comment	Response
			<p>analyze indirect as well as direct impacts, BLM's environmental review must therefore include not only emissions from drilling operations, but the full "lifecycle" emissions from the combustion, transportation, refining (and leakage) of the oil and gas produced.[1]</p> <p>The [EIS] should calculate the amount of greenhouse gas emissions that will result on an annual basis from (1) each of the fossil fuels that can be developed within the planning area, (2) each of the well stimulation or other extraction methods that can be used, including, but not limited to, fracking, acidization, acid fracking, and gravel packing, and (3) cumulative greenhouse gas emissions expected over the long term (expressed in global warming potential of each greenhouse pollutant as well as CO2 equivalent), including emissions throughout the entire fossil fuel lifecycle discussed above.</p>	
12	CBD/WWP	Quantify Potential Emissions	<p>The proposed EAs improperly refuse to engage in any quantitative assessment of the emissions footprint of leasing, despite readily-available tools to do so. The Salt Lake EA, for example, fails entirely quantify greenhouse gas emissions that would result from new oil and gas development. The EA improperly asserts:</p> <p>"Accurate assessments of GHG emissions are not possible at the leasing stage since emissions are dependent on factors such as specific equipment used and duration of use, applicant-committed emission controls, and the expected production rate from the oil or gas well. These factors are not known at the leasing stage. Furthermore, additional infrastructure such as pipelines, roads, compressor stations, gas plants and evaporation ponds are</p>	Refer to BLM's response to Comment #6.

#	Commenter	Resource/Issue	Comment	Response
			<p>also not reasonably foreseeable at the leasing stage and are dependent on the level of development that may occur if a parcel is leased.[2]”</p> <p>Meaningful consideration of greenhouse gas emissions (GHGs) is clearly within the scope of required NEPA review. The courts have ruled that federal agencies consider indirect GHG emissions resulting from agency policy, regulatory, and leasing decisions. For example, agencies cannot ignore the indirect air quality and climate change impact of decisions that would open up access to coal reserves.</p> <p>The EA[s] fail analyze the impacts of increased oil and gas development on greenhouse gas (GHG) emissions and climate change based on this particular lease parcel sale.</p>	
13	CBD/WWP	Meaningful Qualitative Emission Analysis	<p>Greenhouse gas emissions from leasing and development of unconventional wells could exact extraordinary financial costs to communities and future generations, setting aside the immeasurable loss of irreplaceable, natural values that can never be recovered. BLM must provide an accounting of these potential costs in an EIS.</p> <p>The NEPA analysis should therefore put the proposed action’s emissions into context using an evaluation of the proposed action’s social cost of carbon (“SCC”). The Federal social cost of carbon, which multiple Federal agencies have developed and used to assess the costs and benefits of alternatives in rulemakings, offers a harmonized, interagency metric that can provide decision-makers and the public with some context for meaningful NEPA review.[47]</p> <p>The effects of cumulative greenhouse gas emissions will</p>	Refer to BLM’s response to Comment #8.

#	Commenter	Resource/Issue	Comment	Response
			have far-reaching impacts on and inflict extraordinary harm to natural and social systems. BLM must provide meaningful analysis of the proposed action's contribution to these effects.	

## TROUT UNLIMITED

#	Commenter	Resource/Issue	Comment	Response
1	TU	Parcels of Concern	Fillmore FO EA – 4 Parcels of Concern include Parcels [020, 021, 022 [and] 024]. All four parcels we mention above are located adjacent to or through coldwater streams containing recreation fisheries and native cutthroat trout expansion habitat (see Figure 1). In addition to providing a wild trout fishing experience along the Sevier River and within Yuba Lake State Park via Sevier Bridge Reservoir, Bonneville cutthroat trout (BCT) habitat exists in both the Sevier River and Chicken Creek. Bonneville cutthroat trout is Utah's native cutthroat trout and is a BLM special status species and Sensitive Species. In a 2015 Utah survey along stretches of the East Fork of the Sevier River, biologists' data indicates that the potential for further BCT expansion throughout the East Fork Sevier River drainage is significant and represents a boon for BCT conservation. <sup>7</sup> This recommendation can be extrapolated to include other expansion areas for BCT, such as the Sevier River itself and Chicken Creek.	The Sevier Bridge Reservoir, the Sevier River below the dam and Chicken Creek are not considered trout fisheries. Water quality and quantity vary dramatically through the year in the two streams and the reservoir. The mouth of the East Fork of the Sevier River is over 70 miles upstream of the reservoir. Although BCT may have historic habitat as far downstream as the reservoir, the commenter has offered no evidence other than extrapolation that any of them are suitable expansion areas for Bonneville cutthroat, and the Utah Division of Wildlife Resources made no mention of the species in its comments on the parcels.
15		Impacts from Climate Change	The EA fails to inform any analysis of climate change and its impacts on water resources.	Section 4.4.5 states: "Studies have projected the effects of increasing GHGs on many resources normally discussed in the NEPA process, including <i>water availability</i> , ocean acidity, sea-level rise, <i>ecosystem functions</i> , energy production, agriculture and food security, air quality and human health" (emphasis added). Since BLM

#	Commenter	Resource/Issue	Comment	Response
				resource specialists determined that detailed analysis was required for water resources, a more robust cumulative impact analysis including climate change is not warranted.
16	TU	Specific Requests	<p>1. The UT-S-150 stipulation of No Surface Occupancy that is recommended is outdated, referencing back to the old RMP, and is only 100 feet. We recommend a minimum of 500-foot stipulation for fisheries and stream protection; increase buffers for all other watershed protection measures.</p> <p>2. Withdraw Parcel 8719-024 that is located between Sevier Bridge Reservoir and Sevier River from this sale. It is too risky to have oil and gas drilling activities, all the roads and infrastructure, pollution and potential contamination located within this popular public recreation area.</p> <p>3. Develop a stronger climate change discussion and analysis that reflects today's science.</p> <p>4. Increase responsible energy development mitigation measures that take into account the fish and wildlife activity located within this landscape.</p>	<p>1. The EA incorporates UT-LN-55, which requires "no surface use or otherwise disruptive activity allowed within 500 feet of live water or the reservoirs". Additionally, UT-LN-93 will be applied to prevent surface disturbance within 100 yards of the high water line of permanent water bodies. These notices adequately address Trout Unlimited's request for a 500 foot buffer.</p> <p>2. The majority of parcel 024 has a No Surface Occupancy stipulation attached. BLM conducted a Visual Resource Model analysis (Appendix D &amp; E) for this parcel and very little of the non-NSO portion of parcel 024 is visible from Yuba Recreation Area. The information available does not warrant BLM to remove parcel 024 from the September 2018 Competitive Lease Sale.</p> <p>3. See response to Comment # 15.</p> <p>4. BLM resource specialists have determined that the stipulations attached to the parcels are adequate to protect fish and wildlife.</p>

#### PLPCO

#	Commenter	Resource/Issue	Comment	Response
17	PLPCO	Yuba Reservoir	The State urges the BLM to exercise caution regarding the lease sale of parcels UT0918-024 and UT0918-026. These parcels are directly adjacent to Yuba State Park's culinary water source located near Blue Springs. (Please see attached map.) Blue Springs is the only culinary water source for Yuba State Park's Oasis Recreation Area. The State requests the BLM consider the protection of this water source	Onshore Oil and Gas Order Number 2 requires the protection of groundwater zones and appropriate casing to protect those zones. The BLM requires the all lessees to comply with all Onshore Oil and Gas Orders and regulations. The BLM Petroleum Engineers will ensure protections are in place through the approval of APDS and the Petroleum Engineering Technicians will enforce compliance as they witness surface

#	Commenter	Resource/Issue	Comment	Response
			and ensure that any lease of the area avoid the Blue Springs Wellhead Protection Zone. The BLM should require that any wells drilled in the area be appropriately cased to reduce any possible contamination of the ground water aquifer. The State also supports the “no surface occupancy” (“NSO”) stipulation currently in place for parcel UT0918-024, as the north end of this parcel is adjacent to Yuba State Park’s North Beach Recreation Area. Nevertheless, the State does not support the deferral of either of these parcels from the lease sale.	<p>casing, BOPE and production casing inspections. (See EA page 12)</p> <p>UT-LN-56: Drinking Water Source Protection Zone will be applied to mitigate impacts.</p> <p>BLM is not recommending deferral of either parcel.</p>

BOTTOM